

TECHNOLOGY

REVIEW

July 1959



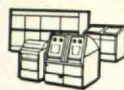
technology review

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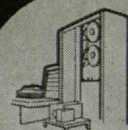
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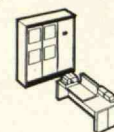
Burroughs 220



Lockheed Acre

GPE Controls
Libratrol - 500

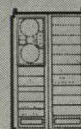
Nortronics Datico

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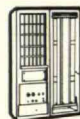
IBM - Sage



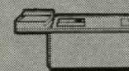
Honeywell 3170



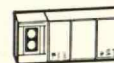
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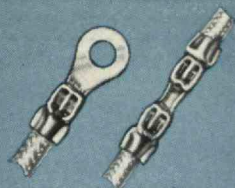
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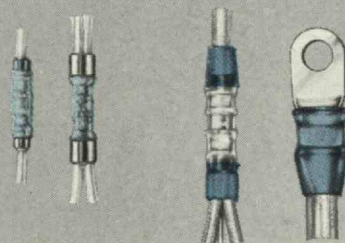
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AMP's product is finished crimp-type terminations on your circuitry wires . . . by the hundreds or millions . . . of the highest reliability . . . performing under gruelling conditions . . . from basic terminals to complete patchcord systems.

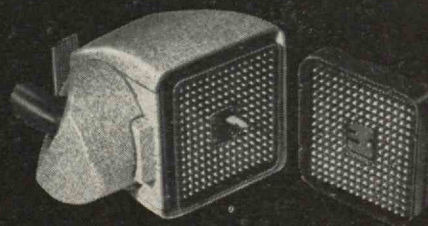


PATCHCORD PROGRAMMING UNITS (Airborne "240" shown)

- universal or shielded systems
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- nylon sleeve insulates and firmly seats patchcord pin in board
- contacts have rear board accommodation for taper pins to provide reliable solderless lead terminations

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- extremely reliable disconnect for ground electronic and instrumentation application
- connector can be electrically disengaged without mechanical separation
- five indexed positions to permit strain-free cable exit
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COMPLETE INFORMATION ON THESE FOUR PRODUCT LINES IS AVAILABLE ON REQUEST.

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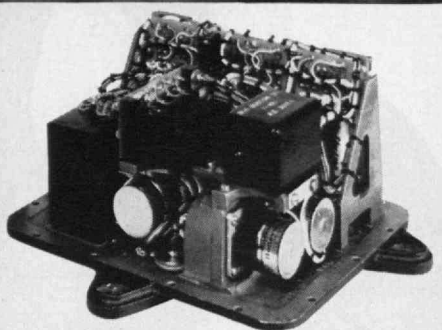
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NEW GLASGOW, NOVA SCOTIA, CANADA



Three Gnat Gyros in Honeywell Three-Axis Turn Rate Transmitter. Size: 8.6" x 6.3" x 5.24". Weight: 5 pounds.



Convair F-106 all-weather jet interceptor incorporates Honeywell Three-Axis Turn Rate Transmitter in flight control damper system

Three-axis control at all speeds and altitudes

The Honeywell Three-Axis Turn Rate Transmitter, featuring three Gnat miniaturized gyros, was selected for the new Convair F-106 "Delta Dart" all-weather jet interceptor. Built into the stability augmentation sub-system of the jet's flight control system, the Transmitter detects rate of turn about the yaw, pitch and roll axes and responds with an output signal whose voltage is proportional to these input rates of turn.

This system is designed to operate under the most severe environmental conditions to which a combat aircraft might be subjected. The Honeywell Gnat Rate Gyros are easily capable of withstanding the severe shock, vibration and temperature requirements of this application and as such are mounted directly upon the base casting without shock mounts to optimize dynamic characteristics of the system.

The electronic portion of the Turn Rate Transmitter amplifies and demodulates the Gyro output signals to provide polarity reversing d-c outputs proportional to the corresponding input rate to each Gyro.

Investigate Honeywell's ability to develop, engineer and produce flight control systems for today's most advanced aircraft and missiles. Write for Bulletin GN to Minneapolis-Honeywell, Boston Division, Dept. 1, 40 Life Street, Boston 35, Mass.

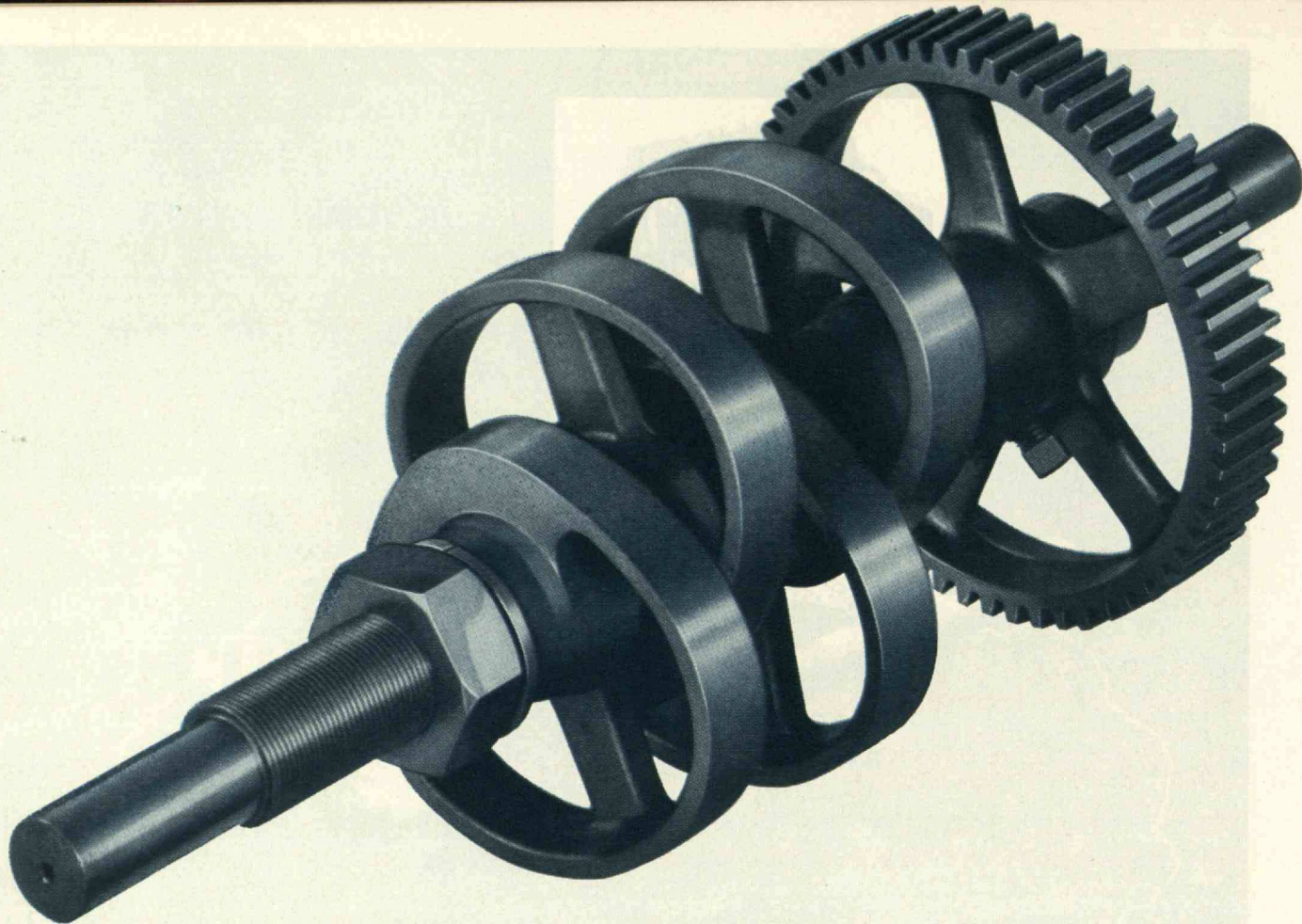


Gnat Rate Gyro shown 1/3 size. Weight: 3.8 ounces.

Honeywell



Military Products Group

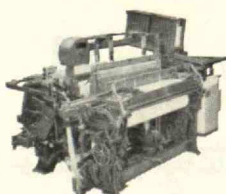


Dependability is built into Draper looms . . . part by part

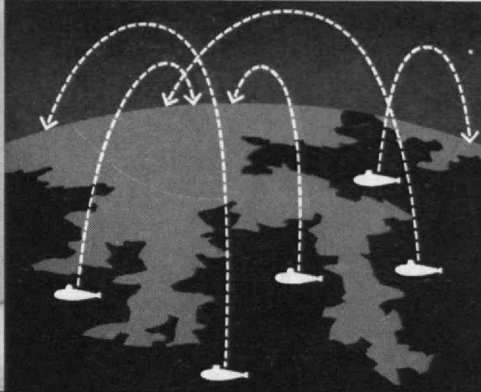
Regardless of size, shape or location, each part is engineered and manufactured to precise tolerances. As a result, *Draper* has become the accepted name for quality and dependability throughout the textile industry.



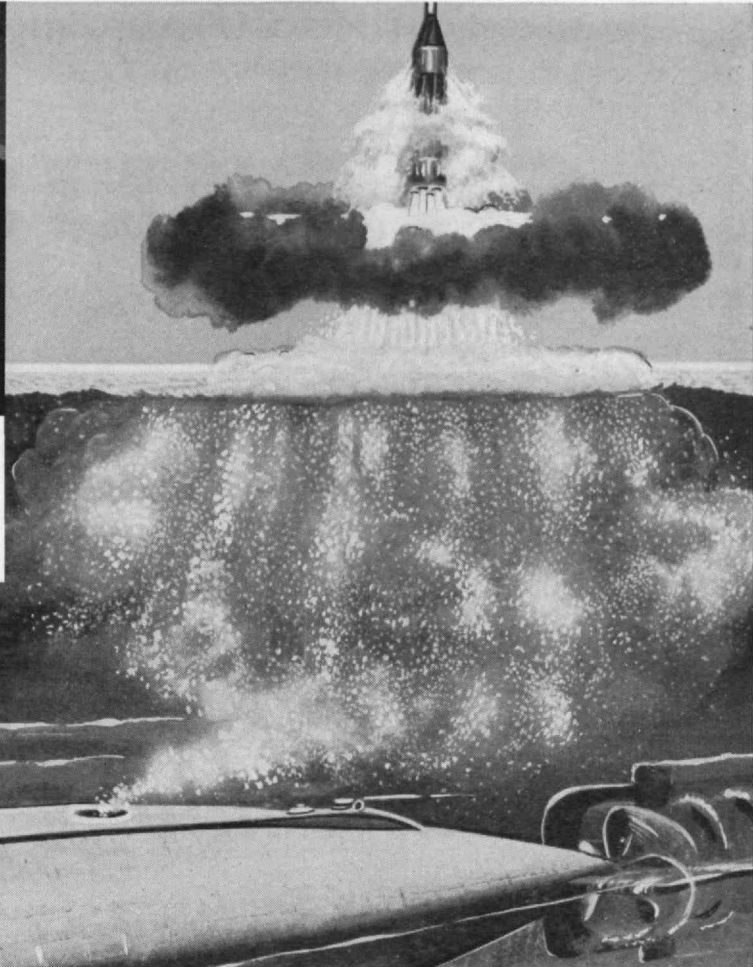
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STRATEGIC IMPORTANCE of Polaris is seen in this symbolic map showing possible launching sites. Every major body of water on earth is potential site for Polaris. 1500-mile range covers most of world's land area.



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Jack L. Baker '49

Wilfred H. St. Laurent, Jr. '51
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David Norton '55

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The new Military Products Division — with a background of twelve years experience as an integrated organization — will carry on and expand the work it formerly handled as a department of the Detroit Controls Division of American-Standard.*

The Military Products Division consists of three departments:

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We of the Military Products Division are proud of our history of association with the Institute, and welcome this opportunity to congratulate Dr. Stratton and wish him and M.I.T. success in continuing leadership.

Our company's first projects were undertaken for the Instrumentation Laboratory, and from this early association with the Institute emerged a close working relationship in our special field of electro-mechanical devices. We have enjoyed the cooperation of the Electrical, Mechanical and Metallurgical Laboratories in particular problems, to mention only the larger areas of effort in our research and development. We express our gratitude for and pledge our continuing support to the work of the Institute.

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Program timer, pulse generator and clock. Timing assemblies, driven by the clock motor, provide momentary contact closings at rate of

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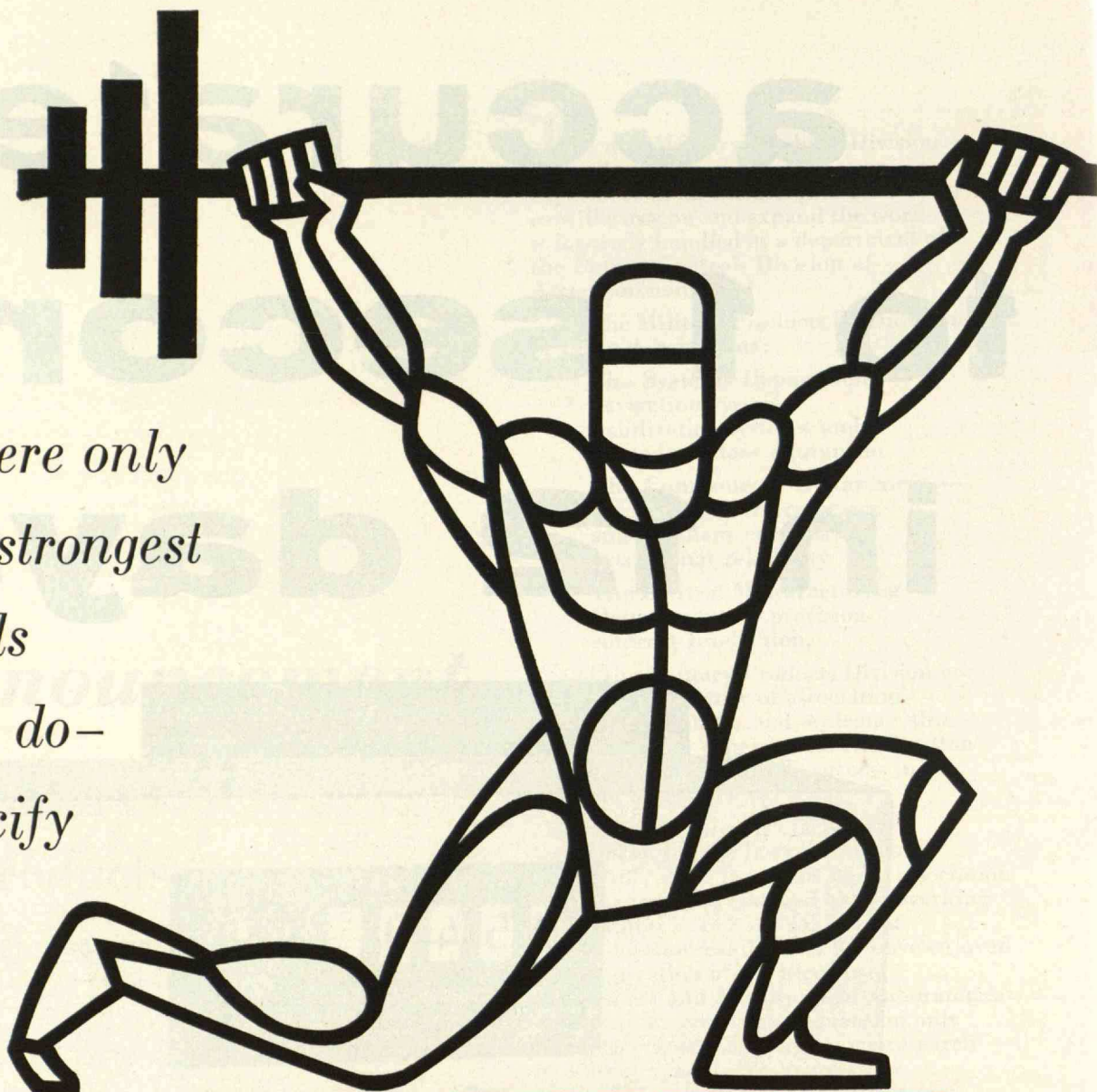
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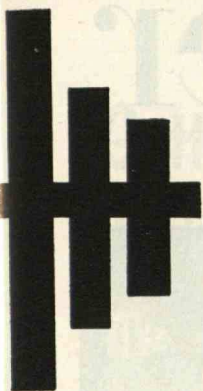
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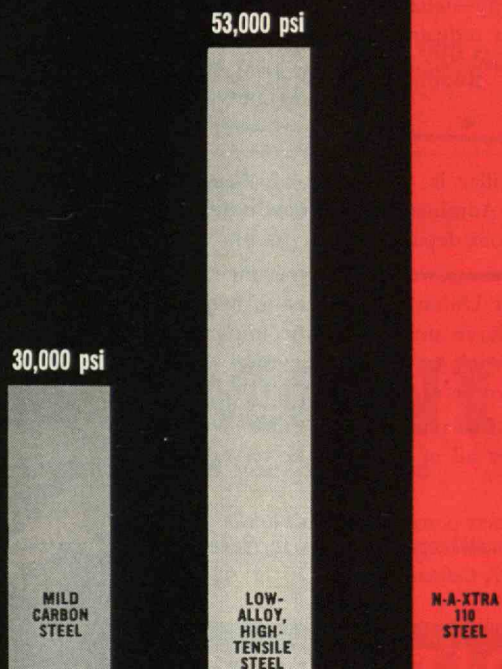
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Charlie Miller

He thinks there are no unimportant jobs

"It's no trick at all for Americans today to out-produce their grandfathers industrially—and still have time left for leisure.

"New machines and new techniques have made this possible.

"Yet I wonder if we aren't losing the pride of achievement Grandpa used to have in his job.

"We continue to hope that the laundry man will sew the button back on our shirt and the production line worker will take a personal interest in the finished product.

"And all too often we're disappointed.

"I grant you that, in an age of specialization, few of us do our job single-handedly any more. But the completed product or service is still only as good as our part of it.

"That's why—whatever your contribution—in an industrial society like ours *there are no unimportant jobs.*"

* * *

Charlie Miller is Supervisor of Wage and Salary Administration in our Industrial Relations department.

His comments, we think, are pertinent. For here at Union Oil, we try to help every employee understand the importance of his job to the company and to his fellow workers.

If each of us realized this, think how much better all of us would be served.

YOUR COMMENTS INVITED. Write: Chairman of the Board, Union Oil Co., Union Oil Center, Los Angeles 17, California.



Union Oil Company OF CALIFORNIA

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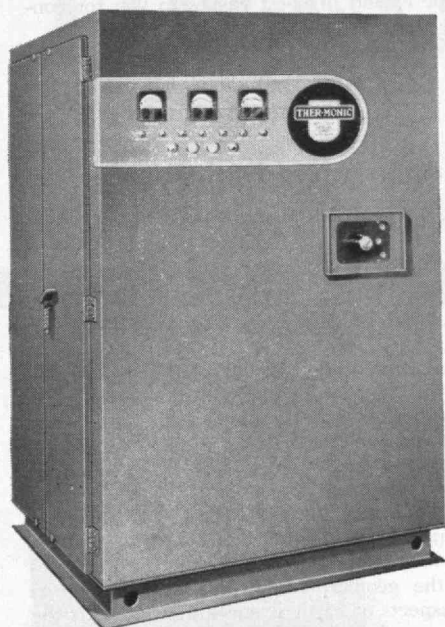
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THER-MONIC is the only induction heater that protects your investment!

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... with a totally enclosed air-conditioned cabinet and a built-in heat exchanger that insures maximum efficiency.

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Congratulations from the Governor

FROM THE STATE HOUSE, BOSTON:

The Review has received a copy of the letter of congratulations sent by Governor Foster Furcolo, who was unable to attend the inauguration of President Julius A. Stratton, '23. It follows:

Dear Dr. Stratton:

I wish to extend my warm congratulations to you and the Massachusetts Institute of Technology on the occasion of your inauguration as the eleventh President of the Institute.

The Massachusetts Institute of Technology is indeed fortunate to have so distinguished and able a successor to Dr. James Killian. It was a happy circumstance that the Massachusetts Institute of Technology was blessed with two such outstanding educators in its top positions of administration so that you were available to fill the breach created by Dr. Killian's departure for service in Washington. And now that Dr. Killian has been appointed to the Chairmanship of the Corporation of the Massachusetts Institute of Technology, in a position where the Institute and the community will continue to receive the benefits of his wisdom and guidance, another top-flight educator and administrator assumes the Presidential Office well prepared to carry on the type of leadership which has made the Massachusetts Institute of Technology pre-eminent in its field.

At a time when there has been such great stress on the importance of science and technology, it has been heartening to see you and Dr. Killian leading the Massachusetts Institute of Technology on a course which not only provides us with superbly trained engineers and scientists but also makes them individuals educated to be responsible citizens of the community. Again, let me extend my best wishes to you for continued, farsighted leadership.

With every best wish, I am

Sincerely yours,

FOSTER FURCOLO

"Systems" Approach to Earth Sciences

FROM JAMES A. ROBERTS:

As a practicing geographer, I was extremely interested in Mr. [Cecil H.] Green's timely donation towards a Laboratory of Earth Sciences at M.I.T. (Technology Review, May, 1959, page 342).

Perhaps more than any other currently popular interdisciplinary endeavor, the association of geologists, oceanographers, meteorologists, and other earth scientists should produce immediate as well as far-reaching results.

It must be emphasized that such studies are meaningful only in terms of their effects on the cultural, as well as the physical environment of mankind. For example, advances in the physics of the upper atmosphere will lead to possibilities in climate control, which could drastically alter (through meteorological effects) the geomorphology of a given area. As interesting as these aspects of earth sciences may be, it is the more profound effects on the regional, economic, and political geography of the area which are of deeper concern to mankind.

I would like to enter a plea, therefore, for the inclusion of studies in geography per se in this broad new curriculum at M.I.T. After all, geography is really the "systems" approach to the earth sciences.

Los Angeles 24, Calif.

[Mr. Roberts is research assistant in the Military Systems Research Division of the Planning Research Corporation. It is located at 1333 Westwood Boulevard in Los Angeles. — Ed.]

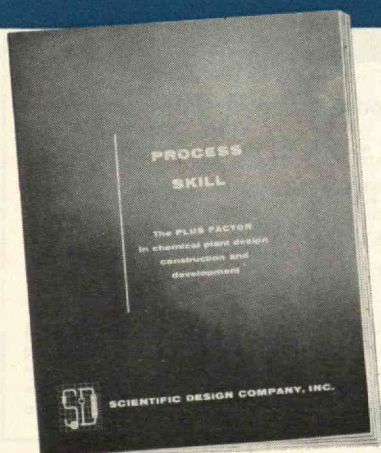


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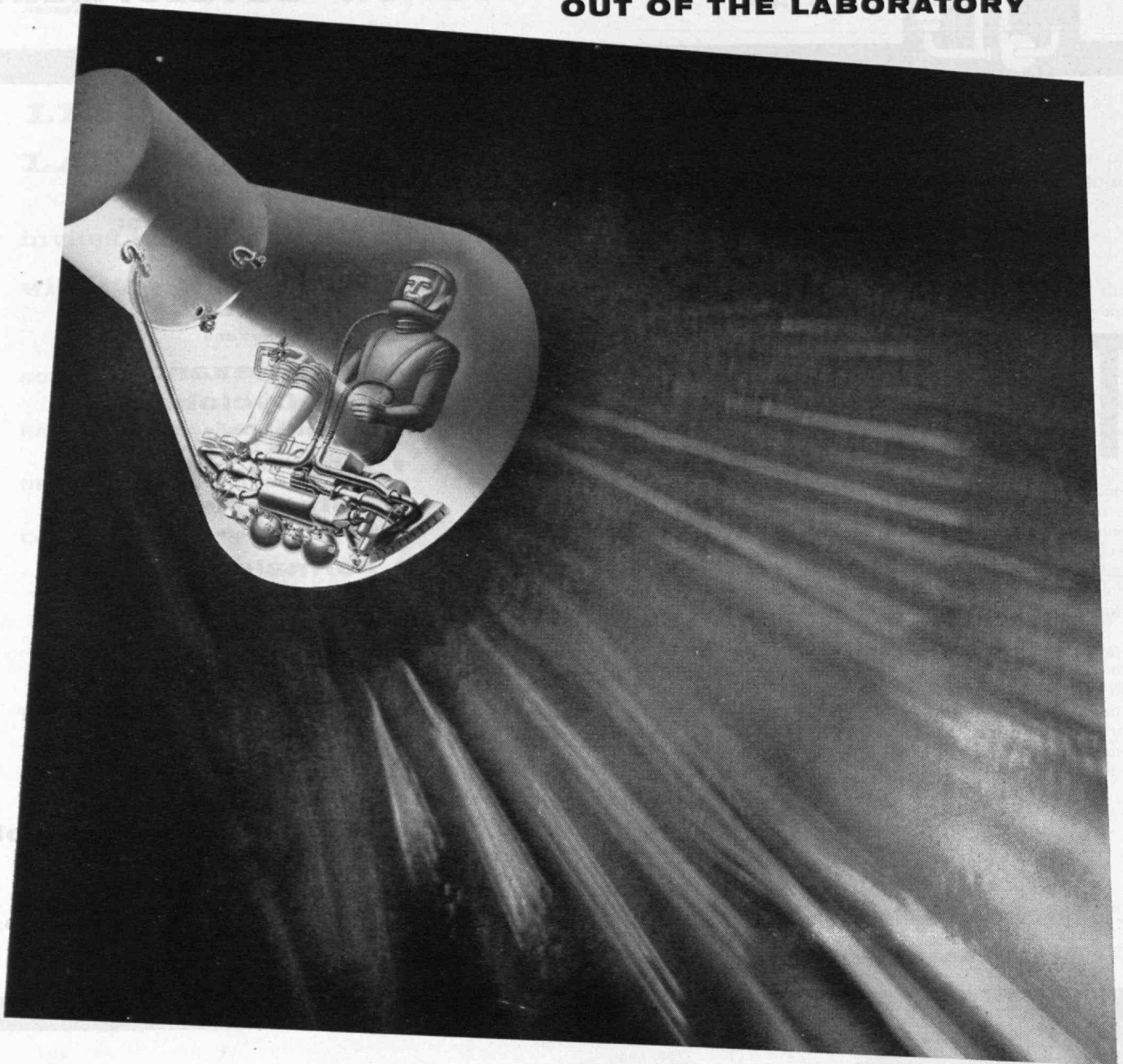
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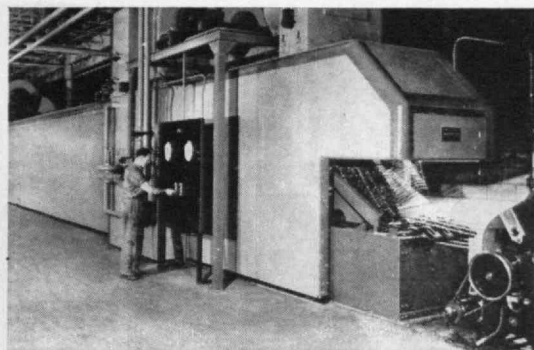


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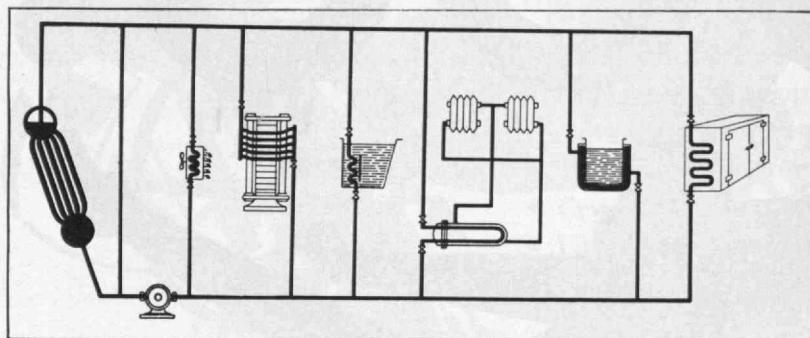
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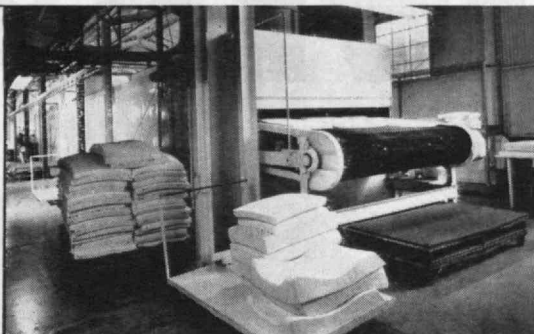
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Ross metal decorating baking oven



Schematic layout of typical Supertherm high pressure water system to replace uneconomical existing process and comfort heat system



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The poison? Obsolescence! The use of a machine that is past its 'point of no return' may not show up too strongly in your unit cost structure now but its cumulative effect is devastating. It's slow poison...slowly sapping the production strength of the user. The longer an obsolete unit remains in service the greater is the unit cost gap between the old and what a modern unit would do. If you have obsolete equipment you are in a slowly deteriorating competitive position.

OPERATIONS WHERE MODERNIZATION WILL PAY OFF!

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Process Heating • Air Heating
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Why not check all operations in your plant that directly or indirectly involve what we call the 'Engineered Atmosphere'? Ask a Ross Specialist to make a study of the systems, equipment and auxiliary units to determine just what is obsolete. He will submit a detailed report as to which should be modernized to bring about the greatest reduction in unit costs. His report will be based on his broad knowledge of 'Engineered Atmospheres' and years of experience in designing the equipment and systems noted in the accompanying list.

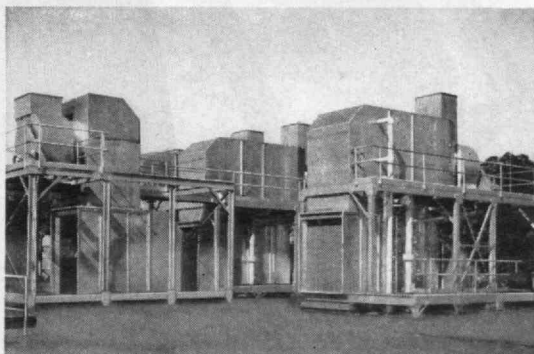


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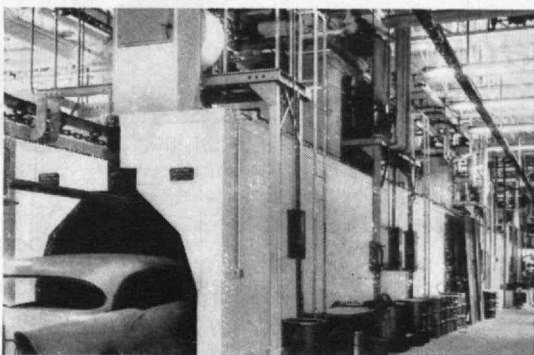
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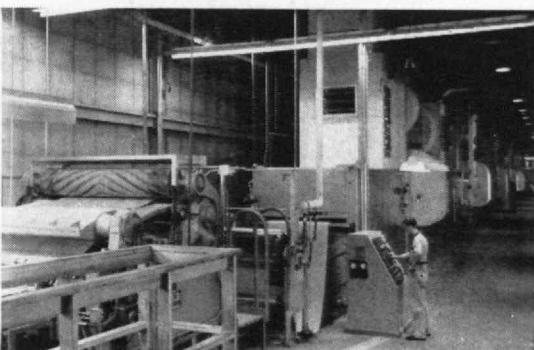
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Kenneth D. Garnjost, 1950

Harvard B. Kolm, Jr., 1955G

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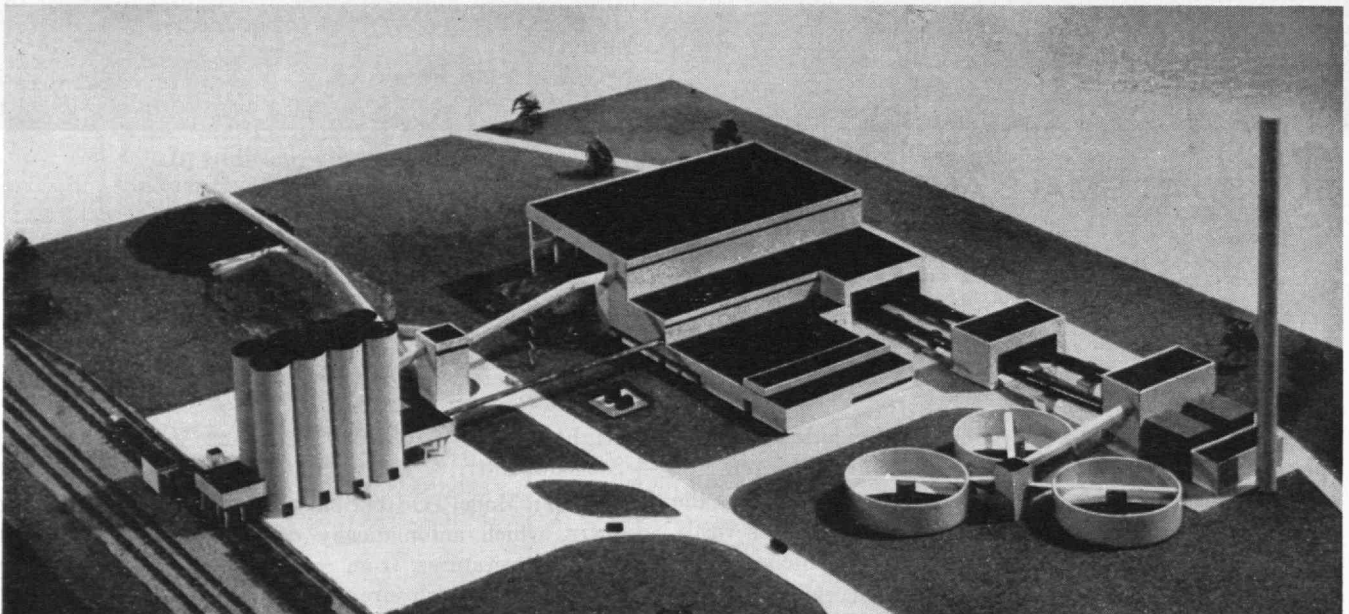
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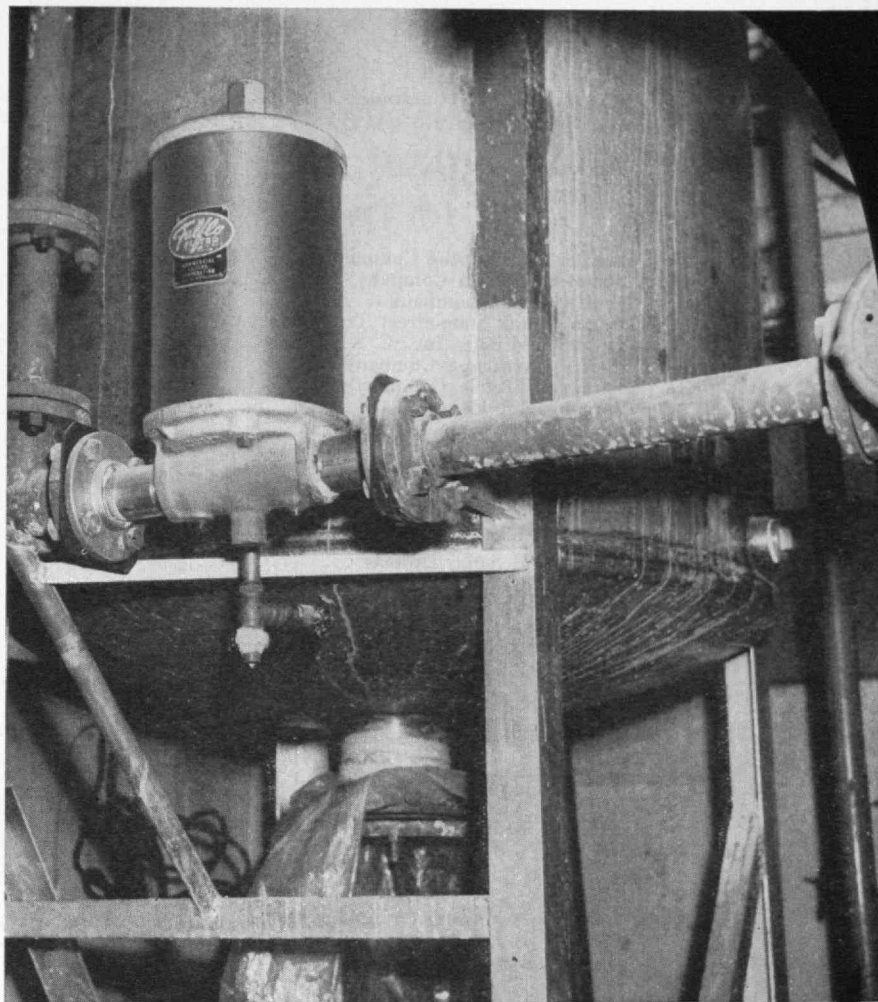
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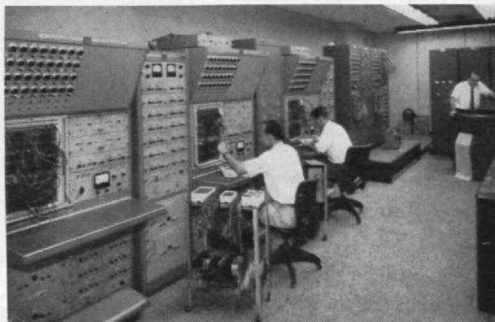
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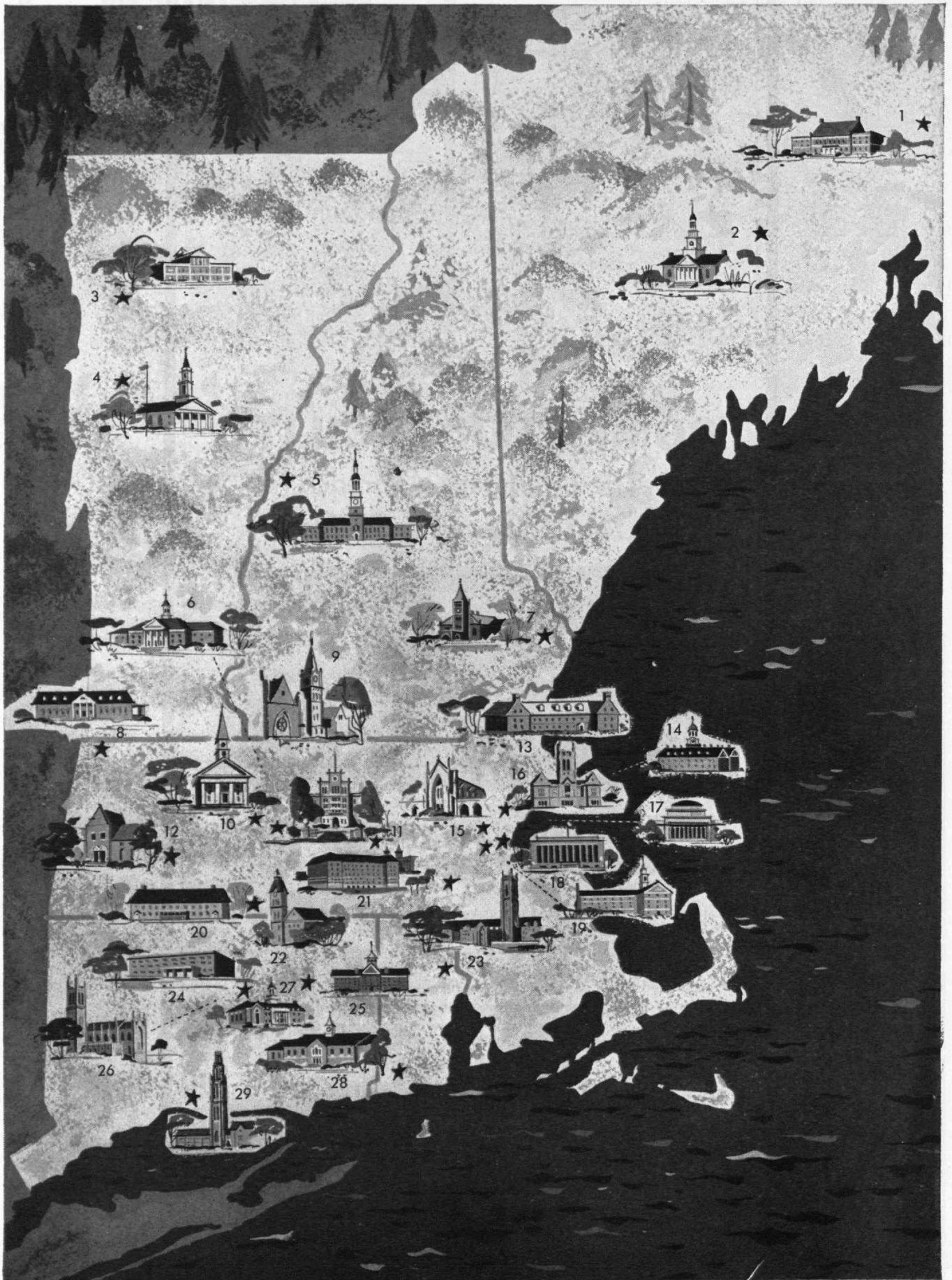
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■ On July 1, 1934, Redfield Proctor, '02, President of the Vermont Marble Company retired as the 40th President of the Alumni Association, being succeeded in that office by Charles E. Smith, '00, Vice-president of the New Haven Railroad; and Harrison P. Eddy, Jr., '17, retired as Vice-president of the Association, being succeeded by Marshall B. Dalton, '15.

Messrs. Smith and Dalton had been members of the Executive Committee during the Proctor administration, as was C. Adrian Sawyer, '02, whose term of office on the committee was for 1932-1934.

These three vacancies on the Executive Committee were filled for the Smith administration of 1934-1935 by George W. Treat, '98; Franklin T. Towle, '08; and H. B. Richmond, '14.

[Three of the above-named subsequently served as Presidents of the Alumni Association, namely: Dalton, 44th President in 1937-1938; Richmond, 45th in 1938-1939; and Sawyer, 56th in 1949-1950.]

■ Calvin W. Rice, '90, Alexander Macomber, '07, and Maurice R. Scharff, '09, retired as Alumni Term Members of the Institute's Corporation, their successors for 1934-1939 being William R. Hedge, '96, Willis F. Harrington, '05, and James M. Barker, '07. To fill the unexpired 1932-1937 term of Jerome C. Hunsaker, '12, who had resigned in October, 1933, to accept membership on the Institute Faculty, Donald G. Robbins, '07, was elected.

[Later, in 1940, Mr. Barker was elected a Life Member of the Corporation.]

■ Faculty retirements at the close of 1933-1934 included Professors Frederick S. Woods, Head of the Department of Mathematics; and Augustus H. Gill, '84, and Charles F. Park, '92, respectively, of the Departments of Chemistry and Mechanical Engineering.



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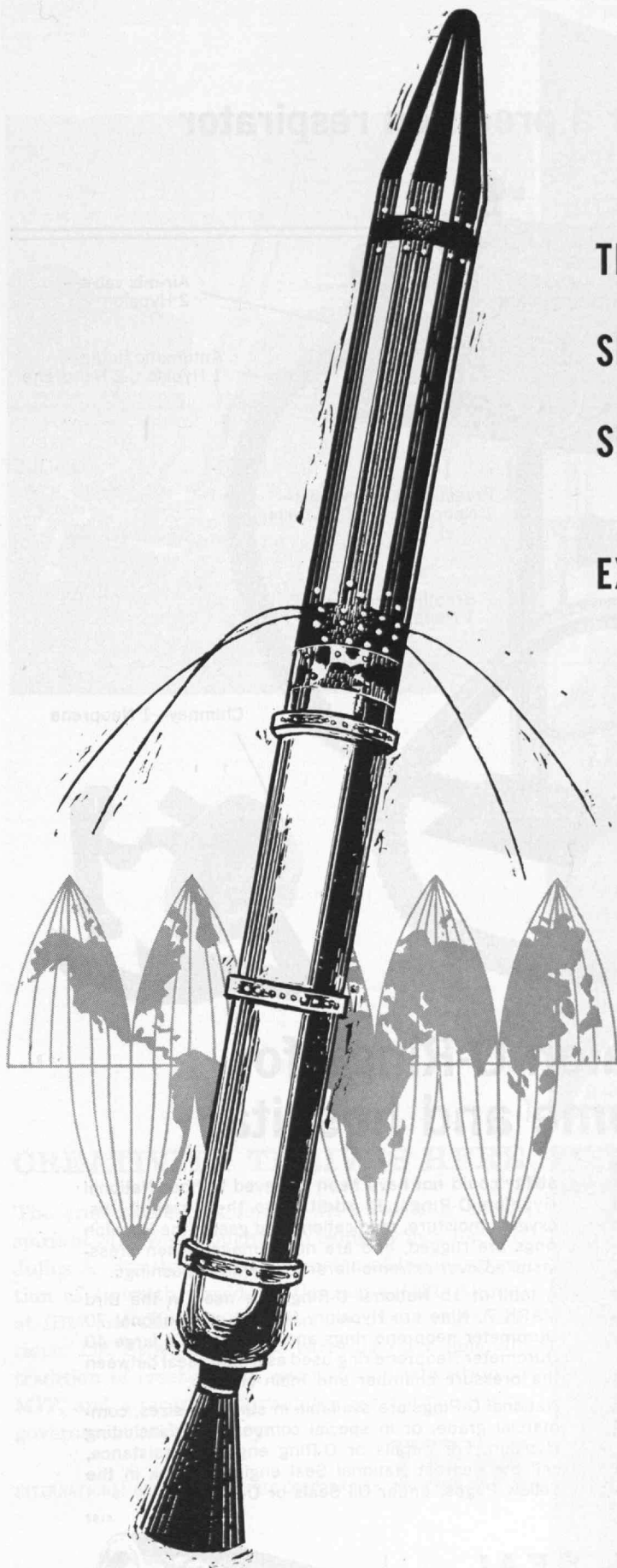
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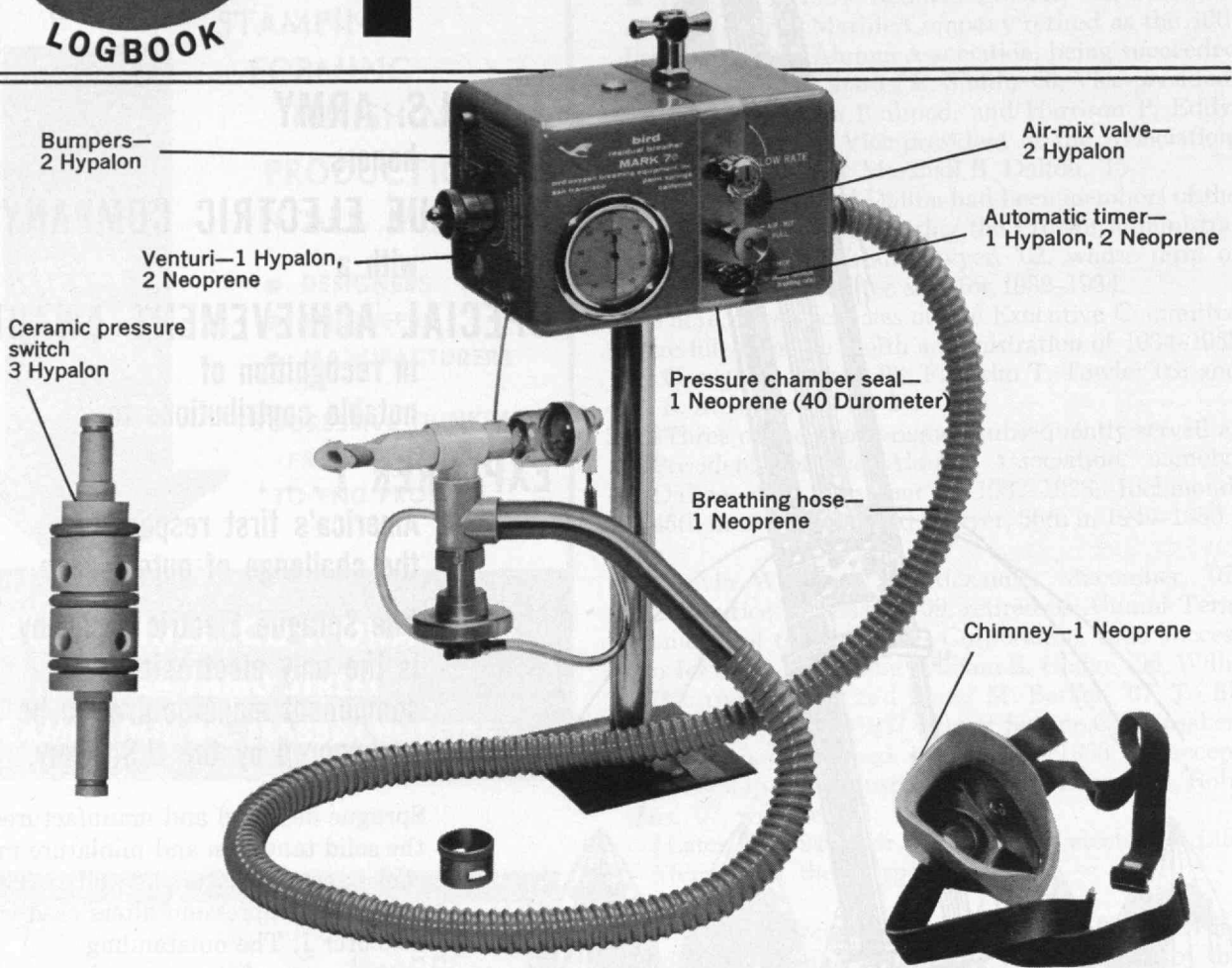
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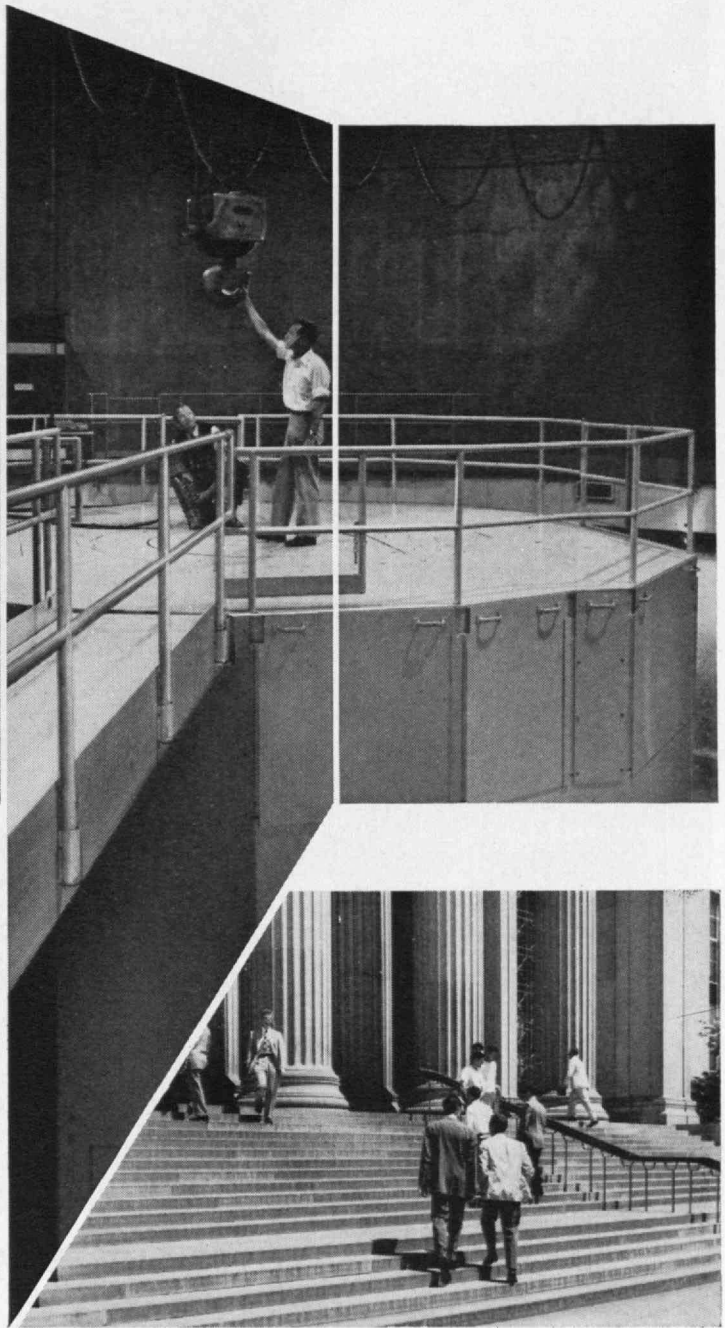
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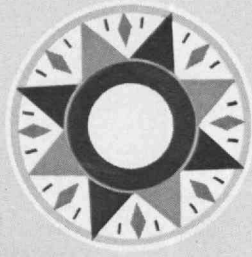


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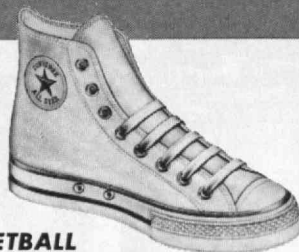
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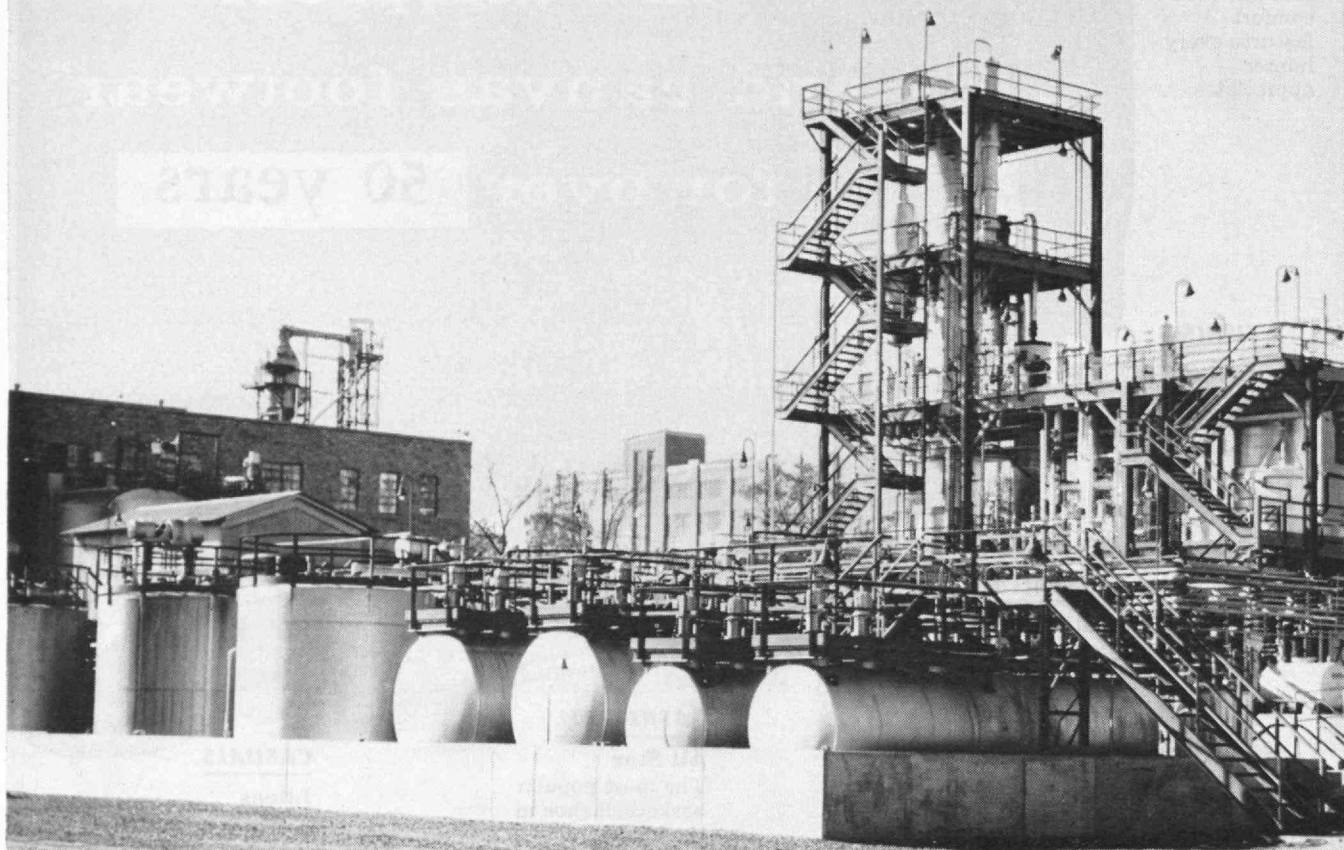
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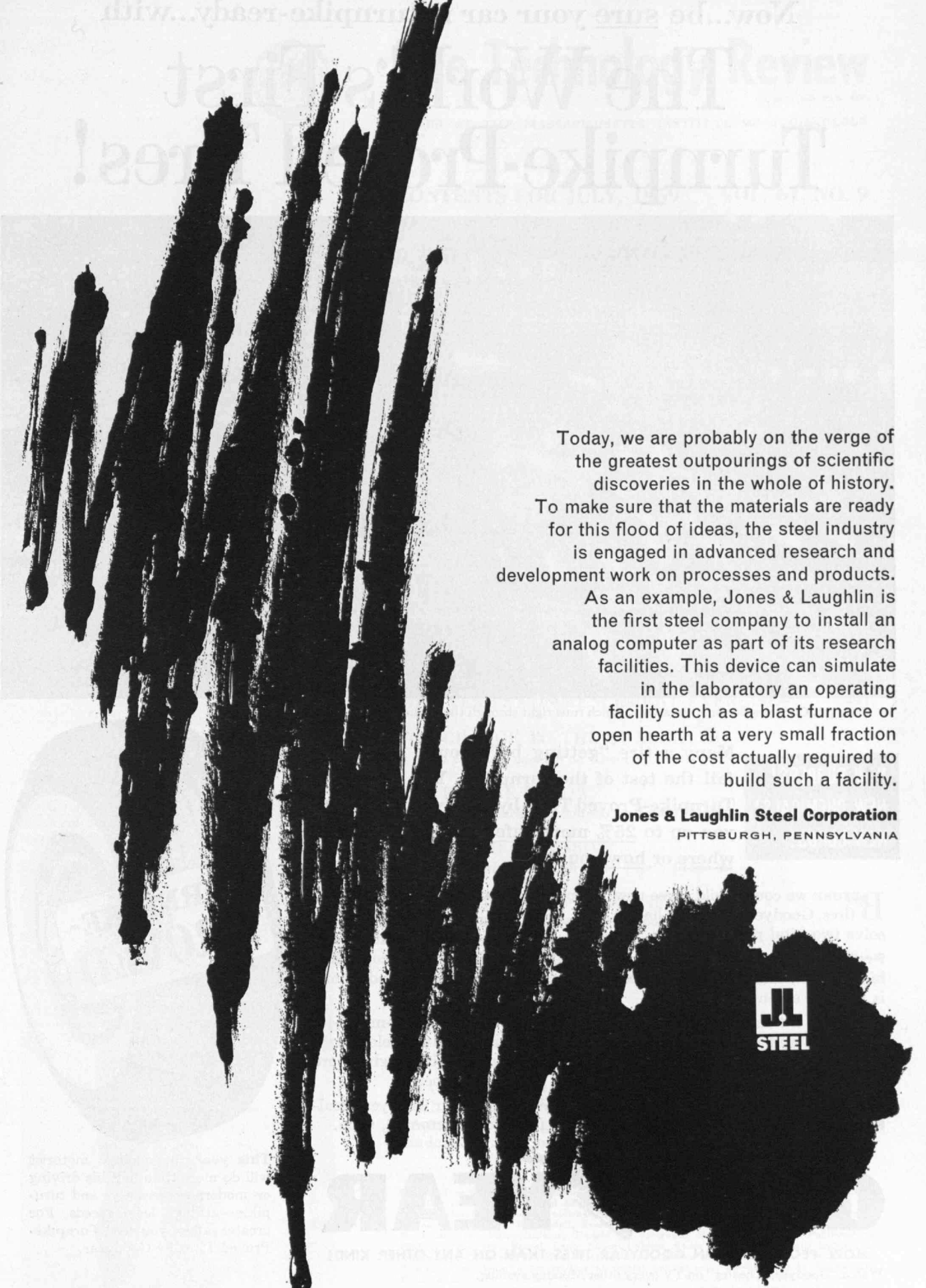
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"Course VI-A men do get around," Professor Eugene W. Boehne, '28, contends and cites this photo as evidence. Charles R. Greene, Jr., '56, posed for it on November 13, 1958, at the geographical South Pole, while spending 375 days there for the National Bureau of Standards.



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The Inaugural Address

by

Julius Adams Stratton

**Eleventh President of the
Massachusetts Institute of Technology**

Dr. Killian, Honored Guests,
Ladies and Gentlemen:

There is, in my own academic world, no higher honor to which I might aspire. To this honor, I add the privilege of following in the path of a friend and colleague of long standing, for whom I hold the utmost affection and respect. There is no one who has had a better opportunity than I, or more occasion, to observe at firsthand the tireless energy and devotion with which Dr. Killian has worked for M.I.T., or the enormous contribution that he has made to our country, and I respond to his words with the assurance that for me the prospect of this continuing and intimate association in a common cause fills me with enthusiasm for the task and confidence in its success.

I, myself, come to you this morning as no stranger. First as a student, then through the ranks of the Faculty, the productive years of my life have been interwoven with the hopes and progress of M.I.T. These years have given to me a sense of the past—a deep respect for those who have gone before, an appreciation of the thought, the energy, and the devotion that have brought to this Institution of ours the high esteem it now enjoys.

But with this regard for the past, I have come to cherish an even brighter vision of the future. M.I.T. is a product of our age. By its aims, its methods, and its ideals it is keyed to the needs and problems of the contemporary world. Today, more than ever, the measure of our greatness will be determined by our capacity to educate for leadership.



The Charter of the Massachusetts Institute of Technology was presented to its 11th President by the 10th President in Kresge Auditorium on July 15, 1959.

The challenge of contributing to such high purpose inspires one to rise above all personal limitations, to approach the task not only with humility and understanding, but also with courage and a venturesome spirit.

• • •

Just 50 years ago, almost to the day, across the Charles, M.I.T. inaugurated its sixth President. Those who listened to Richard Maclaurin on that seventh day of June, 1909 — and some are here today — must have been conscious of the stupendous changes that had begun to envelop their world. The Victorian Age was past, and gone with it was a certain stability in many of the affairs of men. Here in the United States especially there was evidence on every hand of expanding material progress, of a rapid rise in the wealth and prosperity of the country. We had become a world power, and Americans were pervaded by a spirit of confidence and optimism.

At the same time, it was becoming increasingly clear that science and technology were the powerful accelerating forces of our advancement. It is extraordinary, as one looks back, to see what a multitude of inventions that have come to symbolize this modern age were introduced into common use in the first decade of the Twentieth Century. Just the year before the inauguration of Maclaurin, the United States Government signed its first airplane contract. For the sum of \$25,000, the Wright brothers agreed to deliver an airplane able "to attain a speed of 40 miles per hour,

to sustain flight for one hour, and with the ability to land undamaged." In that same year, Henry Ford introduced his Model T car, and wireless telegraphy had developed to the point that the Marconi Company could open its transatlantic service to the general public.

While any catalogue of the inventions and industrial developments of the early 1900's is impressive, the discoveries of science in that remarkable first decade were if anything more prophetic of the future than the advances of technology. Physics in particular broke free from its classical mold with the first formulation of the quantum theory of radiation, of the special theory of relativity, and of our ideas on the radioactive decay of the elements. Thus the opening of our century marked one of the great intellectual revolutions of history.

Yet in 1909 this new world was very new indeed, and I can hardly believe that anyone in Maclaurin's audience could have foreseen the fantastic progress of the next 50 years. Today one travels from Boston to Los Angeles in 5½ hours instead of 5½ days. Networks of communication carry our voices, and soon our images, to every corner of the globe. Nuclear reactors and digital computers have become tools of industry and commerce as well as of research. And space, once the lonely outpost of science fiction, is now a new frontier. In short, great engineering and technical developments have advanced our capabilities by many orders of magnitude.

Man has made comparable gains in every field of pure science. Day by day we penetrate deeper into the ultimate mysteries of the nucleus and of the universe. We have created elements and synthesized complex molecules, including biochemical ones. We have developed great experimental tools like particle accelerators and radio telescopes. We can work at the edge of absolute zero and through thermonuclear fusion have begun to reproduce the conditions that prevail within the suns. Within our lifetime, many of the dread diseases which had afflicted mankind throughout his history have yielded to modern medical science.

But these are only the peaks of great discovery and invention, and their brilliance should not blind us to the massiveness of the developments upon which they rest. For the advances of science and engineering have come to affect every aspect of our lives. They are changing the patterns of our culture and

the form of our cities. They are permeating finance and commerce and shaping the issues of domestic and foreign policy.

Only as we pause to take account, do we discern how far the process of change has carried us, and with what gathering momentum we are being swept forward. Yet in spite of all this apparent progress, we can hardly view the future with unalloyed optimism. We have enjoyed an enormous enhancement of material power and wealth in the United States but have notably failed to resolve some of our most urgent social problems within, and we are challenged from without both economically and politically for our very survival. Our hope for a resolution of these problems will depend upon our wisdom and our command of the forces we have set in motion.

The basic question is, can we in fact control our destiny? I myself have faith that with intelligence and resolution we can. Although I recognize full well that our course as Americans cannot be pursued in isolation from that of the other peoples of the world, nonetheless, I am convinced that at this juncture in history the success of our efforts will rest largely in two courses of action, both rooted in education.

First, we must understand that our future economic health, quite as much as our military security, will be governed wholly by our capacity to maintain technological superiority. We have no alternative and must bend all our energies to maintain the advance of science and to expand its frontiers. An inner thirst for knowledge and understanding draws men to research; but it is incumbent upon the universities, upon industry, and upon government to provide a soil and climate in which research may flourish.

Secondly, in our concern for external security we must not ignore a wide range of urgent and difficult social problems brought about by the technological revolution itself—problems such as the growth of our cities and population, the interrelation of men and machines, the production and distribution of food, the increase of leisure, to name but a few. In their form, if not wholly in their substance, these are new problems, and the men and women who will deal with them most effectively must have a new kind of education.

It is in this context of national necessity that M.I.T. must examine its role:

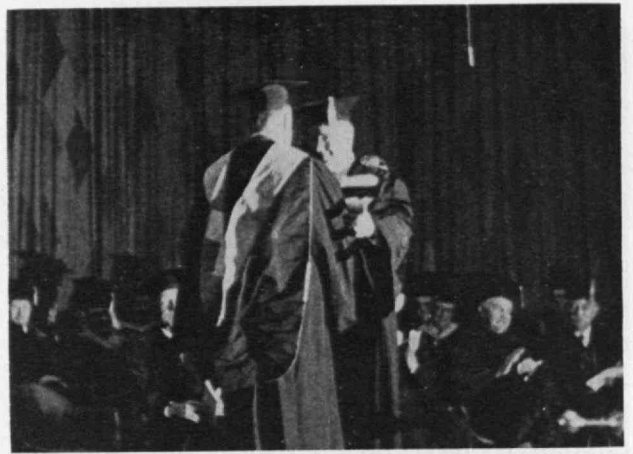
Very nearly 100 years have gone by since the founding of the Institute. On this Alumni

Day one may look back with a great deal of admiration on the part that M.I.T. has played over the century in developing the industrial power of our country. From our Alumni have come men who have helped to construct the highways, the bridges, the great cities. From the earth they have taken the oil and the minerals. They have built and managed great industries. They have been among the foremost leaders of a vast and growing research and development effort in the nation. To a multitude of professions they have brought a mastery of the methods of science and engineering.

As we recall these accomplishments, it is important to remember that this institution was created by William Barton Rogers as an expression of faith in certain new concepts of professional education and that from the very outset our academic policies have been directed by a few central ideas. In essence, Rogers maintained that there is dignity and importance in the mastery of useful knowledge; that the foundations of a professional life may profitably be laid in the undergraduate years, combining with and contributing to a liberal education, to the enrichment of both; and that science and engineering can be the legitimate foundations of a higher education.

M.I.T. has been built upon these convictions. The contributions of our graduates over the years both at home and abroad provide ample proof of their essential worth. I think it well on this occasion that I reaffirm my own confidence in the basic soundness of these principles.

Yet the course upon which they must now guide us leads into a future that will be totally unlike the world of Rogers or even of MacLaurin. M.I.T. must adapt itself to the needs of a changing epoch. It must assume new roles and accept new responsibilities. But as we lift our eyes to ever higher horizons, it must be with the clear understanding that no task is presently more urgent than the education of youth. The greatest contributions that M.I.T. can possibly make to the common good will be made through those young men and women who will have shared with us for a period the experience of striving and learning. Everything that we do, whether for the advancement of knowledge or in the interest of public service, should be viewed in the larger context of our teaching mission. The highest goal to which a university may aspire is that its sons



Chairman Killian said: "Julius Adams Stratton, by the authority of the Corporation and with the entire approval of the Faculty, and Alumni, and the Student Government and the delegates here assembled, I present to you the Charter of the Massachusetts Institute of Technology and I invest you with all the authority, privileges and responsibilities of the office of President of the Massachusetts Institute of Technology. May you serve the Institute and dignify the office of President with all the skill, wisdom and dedication which our confidence accords to you."

and daughters shall be leaders in art and science and that their influence shall be brought powerfully to bear for the welfare of mankind.

. . .

With this affirmation of purpose, I come now to certain thoughts upon the quality of education at M.I.T. and the directions in which we should guide our efforts. There are, in my view, three areas that particularly merit our attention.

First, I think that we must strive to develop more effectively the creative, imaginative, constructive powers of the student.

Secondly, we must bring about a more productive integration of the humanities and social sciences with the physical sciences and engineering.

And thirdly, I am convinced that we must endeavor to impart to our students a better understanding of the professional estate and of the values that it implies.

Let me elaborate upon these three aims in a little more detail.

Throughout the entire history of the Institute, much of the strength of our educational plan has been derived from the rigor and thoroughness of our method. From the day he enters as a freshman the undergraduate learns to work in depth and to be held accountable for the results. He learns also to work under pressure and to marshal and employ his knowledge

under test. From this discipline and mastery of fundamentals comes an intellectual self-reliance that will stand him in good stead.

We wish in no way to lessen this rigor. But the acquisition of accumulated facts and the formal instruction of lectures and classroom is properly only part of the educational process. The intellectual discipline of tests and problems must be supplemented and enlivened by other forces that will arouse and stimulate the impulses of originality latent in every student.

Some of you may have been fortunate enough to have heard Edwin H. Land two years ago in Kresge Auditorium speak eloquently on this subject. He expressed the conviction that "the freshmen entering our American universities have a potential for greatness which we have not learned to develop fully by the kind of education we have brought to this generation from the generation of the past."

It seems to me that it is in the context of these ideas that research takes on its full and proper meaning in the university. By its very nature, research demands originality in thought and action; and it is in research that the student as well as the Faculty can find an outlet for his creative interest and energy, and share in the intellectual excitement of new discoveries. Consequently, university research serves but half its purpose if it becomes remote and isolated from the students themselves.

Of course, I understand that only at the graduate level does a student normally begin to participate effectively in research. I am also well aware of the practical difficulties of undergraduate involvement in advanced work. But I do believe that the spirit of originality and independence of thought that permeates our superb laboratories should begin to influence our students from the time of their arrival. Whether an undergraduate himself produces a piece of work of any novelty is of little moment. What is important, is that we stir his imagination, encourage him to break free from the channels of conventional thought, and teach him how to bring to bear upon his problems the facts and methods acquired in the classroom.

As I express these ideas, it is with the conviction that they apply with particular force to engineering education. Lately, engineering has been pushing its roots deeper and deeper into all areas of science and mathematics. This has been a necessary and, indeed, inevitable

trend. But we must remember that engineering is art as well as science.

From his earliest history, man has been driven to build and to do, and the fulfillment of this urge finds its highest expression in the work of the engineer. The engineer is concerned with making and with producing, with converting the yields of pure science to useful products and services. His function is to adapt knowledge to beneficial ends, to find ways and means of solving the practical problems of human existence. There is, therefore, in the education of the engineer, the most compelling reason to develop by all possible means the creative and constructive powers of the student. The achievement of this goal is one of the great challenges and opportunities in education today.

I come now to my second objective. The contributions that the humanities and social sciences have to make to the education of the scientist and engineer have been clearly established. Over the past decade, under the leadership of Dr. Killian and Dean Burchard, the Institute has won wide recognition for the support that has been given to these more liberal aspects of our curriculum. I think it important to say that I too am convinced of the wisdom of this course. I also believe that we must now strive to integrate the teaching and research in these areas even more closely with the larger interests of the Institute.

The range of our professional activities at M.I.T. has for some time been steadily widening. We are concerned not alone with science and engineering for their own sake, but increasingly with fields on which science and engineering have a direct impact in contemporary society. In addition to the obviously related field of economics, we are becoming increasingly active in such areas as psychology, political science, and other social studies. Our Center for International Studies, and indeed the School of Industrial Management, also fall into this category. This growth is both desirable and inevitable. However, I feel that our efforts in these new fields will be most fruitful if we are able to capitalize to a greater extent upon our special resources as an institute of technology. In fact, the justification of our excursions into these new areas is that they express a natural extension of the central purpose of the Institute. Although I am satisfied that notable steps have been taken towards meeting these criteria, much more can

be done to bring about a freer and more mutually profitable interchange between students and faculty of the several schools.

And now thirdly and briefly, we should remind ourselves that M.I.T. is a professional school, and as such we have an obligation to impart to our students an understanding of both the privileges and responsibilities inherent in the professional estate.

What in fact constitutes a profession? In the sense that I am speaking, all the professions share certain qualities in common that set them apart from the other occupations of men. Each, of course, is centered upon a particular field of learning. Each makes high demands upon the intellect and requires a mastery of special techniques. But it is an attitude that distinguishes the professions rather than their particular content. Above and beyond all technical competence, the truly professional man must be imbued with a sense of responsibility to employer and client, a high code of personal ethics, and a feeling of obligation to contribute to the public good.

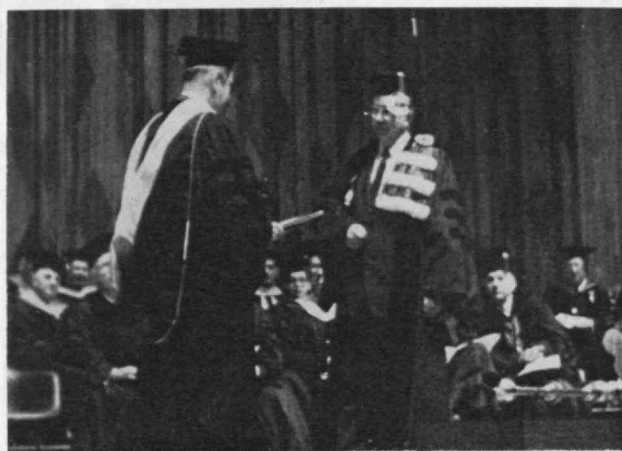
As a great educational institution, we shall fall short of our mission if we fail to inspire in our students a concern for things of the spirit as well as of the mind. By precept and example we must convey to them a respect for moral values, a sense of the duties of citizenship, a feeling for taste and style, and the capacity to recognize and enjoy the first-rate.

I have ventured this morning to emphasize once again how the extraordinary advances of science and engineering have brought to our contemporary world both new problems and new opportunities. Whatever their solution may be, we shall in dealing with them have to draw heavily upon our resources in education. Because of its character, its traditions and achievements, M.I.T. has a major role to play.

Somewhere in his writings, Charles W. Eliot, who was later to become President of Harvard, remarked that when truly American universities appeared, they would be indigenous to our soil, relevant to our time, and would grow out of national need. I can think of no better way of summing up the essential character and spirit of M.I.T.

As I come to the end of my remarks, there are a few final thoughts that I should like to share with you upon the nature and responsibilities of the office that I have just assumed.

A university is an extraordinarily complex organism. It works in many fields of scholar-



President Stratton said: "Dr. Killian, I accept this Charter as the symbol of office of the President of the Massachusetts Institute of Technology, and do so with a full sense of the magnitude of my responsibility. I am deeply grateful for your trust; and I pledge myself to work unremittingly with the Corporation, the Faculty, the Alumni and the student body for the greatest good of this institution."

ship. It encompasses a wide range of operations involving teaching, research, and, in these days, government contracts. It has obligations to a varied constituency — students, faculty, alumni, and trustees. A university must be administered. As in any great enterprise, there must be a source of prompt, clear-cut decisions and an orderly handling of administrative affairs.

But good administration, indispensable as it is, is only the beginning. It has been said countless times that the faculty is the university. Upon the president himself rests the responsibility of creating and maintaining a climate in which both learning and teaching may flourish. This means an intellectual environment in which imaginations are stirred, which fosters confidence that worthwhile things can be done, and where feelings of freedom and security go hand-in-hand with a sense of obligation and loyalty. In such a favorable climate, president and faculty work together in harmony and share the excitement of planning and building.

But there remains to the president one more function of leadership. In the perpetual debate of ideas that is the essence of a university, he must be more than a referee. He must himself be prepared to take positions on matters of educational import. Above all, he must be able to formulate his aims and make clear what he proposes to achieve. And in all these things he must be guided constantly by a vision of the highest goals of his institution.

To this charge I pledge my whole endeavor.

"A Steward of Excellence"

Chairman Killian salutes his successor and describes current needs in science, engineering, and education

Before the investiture of Julius A. Stratton, '23, as the 11th President of the Massachusetts Institute of Technology, in Kresge Auditorium on June 15, Chairman James R. Killian, Jr., '26, of the Corporation spoke as follows:

THE presence of this assembly makes a happy and inspiring day for our institution and for the man we formally induct today as our President. Your presence affords us an opportunity, which we grasp with enthusiasm, to express to our new President our confidence, our support, and our affection. This is *his* day, and because it is, we who know him well view it as a fortunate one for education, for science and engineering, and for M.I.T.

During the past 18 months I have viewed our national needs in science, engineering, and education from what has been called by others a hot spot and what I have found to be both warm and heartening. This assignment has been part of a national effort to strengthen science in the United States. Within the spirit of today's occasion let me draw upon this experience to emphasize briefly some of our current requirements in science, engineering, and education. This institution is in a strategic position to help in meeting them, and it is fortunate that we have in our new leader a man exceptionally qualified to serve our national as well as our institutional needs.

Let me first observe that if we are to maintain our leadership in science and technology in the United States, it is not enough to launch crash programs and to enlarge efforts. We must cultivate and enhance excellence, creativity, and motivation at the very roots of our effort, and education is the tap root.

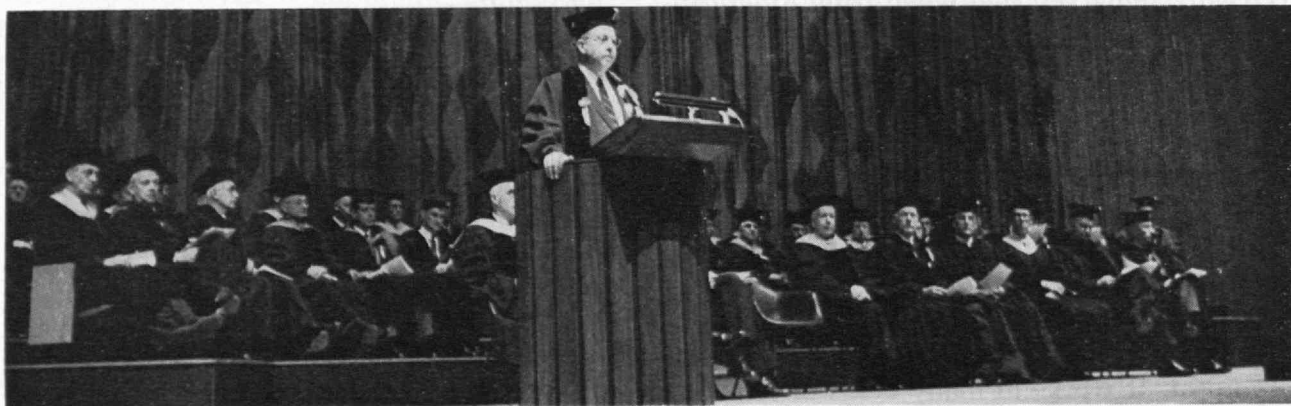
Next, the quality of our science and engineering and indeed of all of our professional endeavors cannot be wholly separated out from the quality of our intellectual life generally. As the late A. Lawrence

Lowell once remarked, you cannot lift a blanket by one corner. What we must be concerned with basically is the importance which the American people give to the factor of excellence in our society.

Third: We must achieve a broader understanding and support of basic research. We must overcome a long-standing and still inadequate emphasis on this wellspring of excellence in science and innovation in technology. The current period also requires the nation to intensify its scientific effort in many unfolding fields, ranging from geophysics and materials research to the life sciences.

Fourth: For the benefit of our total technological and scientific effort, we need to be more tough-minded, thorough, and profound in the planning, management, and execution of our technology. This places greater requirements for versatility and profound scientific understanding on our engineers and calls for increasing numbers of engineer-managers, men who deeply understand the technology with which they deal while at the same time they are skilled in the arts of management. This is especially important in the management of our weapons technology.

Fifth: We must develop the discipline and sense of priority to put first things first. There is today a tendency to let the spectacular aspects of some kinds of technology lead us to give undue attention to projects which are glamorous at the expense sometimes of activities which are important and badly needed. In this season of the spectacular, it is common to confuse imagination with undisciplined fancy. It requires no really audacious imagination to propose bases on the moon and systems of space warfare; it does require genuine imagination by disciplined minds to make the really important discoveries and decisions which will advance the excellence of our science and technology.



Sixth: The nation's responsibilities and opportunities in science and engineering have grown to the point where the nation finds itself today with too few first-quality institutions of higher education in science and engineering. This was emphasized by the report on science and engineering education prepared by a panel of the President's Science Advisory Committee — a panel under the chairmanship of President DuBridge. As it emphasized, we need more institutions of the same quality as the best we now have; in particular do we need more top-flight graduate schools. We have a few centers of great distinction — as distinguished as any to be found in the world — but we have too few of these and only a handful that excel in more than one field of science. We need more top-flight graduate schools of science as good as the best we now have and each with more top-flight departments. We should have twice as many first-rate graduate schools of engineering as we now have. At the last count we were producing only about 650 doctor's degrees in engineering each year, and this is far from enough.

Seventh: Outstanding accomplishments by us in pure science for purposes of understanding as well as application can bring our society internal poise and strength as well as prestige and acclaim among mankind as a nation that demonstrates the humane capacity of science to enhance all men's welfare and each man's understanding and dignity.

Eighth: We must continue in our efforts better to mobilize the free world's scientific resources. Today there is a tide in the affairs of nations and of science which makes it particularly timely that we promote more massive international co-operation and exchange in science.

DR. STRATTON's assumption of the presidency of M.I.T. places him in a key position, and at a crucial time, to make his qualities of leadership more amply available to this national crusade to strengthen and enhance our science and technology in the United States and in the free world.

Both he and this institution have great resources to help in meeting these national and international needs as they have so impressively demonstrated. In saying this I speak not alone from the vantage point of my recent assignment but from many years of acquaintance with M.I.T. and with our new President.

Let me indicate why I have this great confidence both in our institution and in him.

I have seen the Institute in time of war become a great scientific arsenal. I have seen it in the excitement and release of intensive reconversion back to an educational institution. I have seen it in times of stress, when academic freedom required resolute reaffirmation, and in a time of rapid growth.

Throughout these times of stress and change and unfolding opportunities, the institution has held steadfast to its basic objectives while putting its service to the nation and to youth above any parochial institutional considerations.

Throughout these periods of change there has been unwavering devotion and a sense of common cause



Harvard University conferred an honorary degree on President Stratton, hailing him as a "humane, perceptive man of science, a good neighbor and helpful friend" on June 11. Listening to an anecdote here are David T. W. McCord (left) of the Harvard Library and Dean McGeorge Bundy of the Faculty of Arts and Sciences.

among our governing groups — Corporation, Faculty, and Administration. There has been remarkable freedom from internal stresses and factions. There has been here a pervasive dedication to the welfare of the institution, a unifying sense of the deep importance of our mission to the welfare of the country, a humane concern for the individual, a driving urge to greater excellence.

These things I emphasize to express my own deep sense of privilege in being associated with this institution and to express my tribute to the Corporation, Faculty, Alumni, and students for the privilege of working with them.

I mention these great assets, too, as a tribute to our new President. As student, Faculty member, Corporation member, and administrator he has built a record which commands our wholehearted respect and admiration, and in these varied capacities he has contributed unfailingly and brilliantly to the strength and advancement of our institution. I would speak particularly of the rare privilege it has been for me to have him as a close friend and colleague. I look forward with the deepest satisfaction to the continuance of this happy relationship and to the opportunity I will have to support him in his new and great responsibilities.

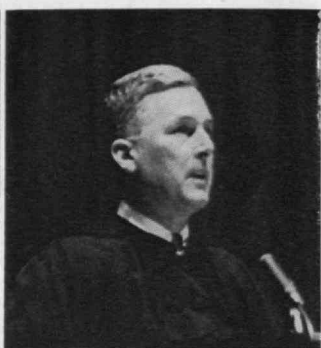
And as he assumes his high office, may I, with a twinkle in my eye, recall the words of Mr. Valiant-for-Truth in *Pilgrim's Progress*: "My sword I give him that shall succeed me . . . My marks and scars I carry with me . . ."

Dr. Stratton will better understand this, as will any college president, when in the distant future his presidency draws to a close.

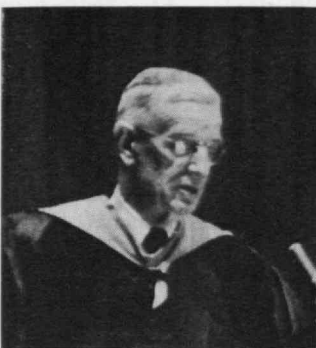
We of M.I.T. feel secure in our new leadership; we feel inspired by the ever-growing opportunities we face. We back our new leader; we confidently expect a presidential regime happy and strong and forward-thrusting. We honor him for what he is and has done; we salute him as a steward of excellence; we pledge him our full support in his new duties, confident that he will discharge them faithfully and with great distinction.



William P. Allis, '23
The Faculty



Nathan M. Pusey
Harvard University



Vannevar Bush, '16
The Corporation



Lee A. DuBridge
Calif. Institute of Technology

The Greetings to President Stratton

His life, education, and capabilities are described
by spokesmen for Institute people and other schools

CHAIRS, tents, and stands filled the Great Court and long red draperies hung as a backdrop between the pillars of the entrance to Building 10, but June 15, 1959, was a damp, chilly day in Cambridge, and at 6:30 A.M. the committee in charge of arrangements for the inauguration of Julius A. Stratton, '23, as the 11th President of the Institute, reluctantly but firmly ordered that its foul-weather plans be put into effect. Alumni hastened up the Massachusetts Avenue steps in raincoats, and professors left the boxes containing their gowns and hoods in their offices.

The Kresge Auditorium filled rapidly. The flowered hats of the principals' wives in the front rows brightened the scene there and the prelude by 40 members of the Boston Symphony Orchestra silenced the grumbles about the weather. When Chief Marshal William L. Stewart, Jr., '23, placed the mace on the stand, the disappointment of those who had come for an academic pageant in the Great Court had begun to dissipate. The National Anthem was sung and the invocation was given by the Reverend Gardiner Mumford Day, Rector of Christ Church in Cambridge. Then the words of Chairman James R. Killian, Jr., '26, and those of his successor as President, warmed the atmosphere not only in the auditorium but also in the Little Theater and the Armory where others listened.

Professor Allis Has Fun

When the formal ceremony ended and William P. Allis, '23, Professor of Physics, began the greetings, his broad smile was contagious. "Julius," he said, "I bring you greetings from the Class of '23. We always knew you had it in you. We have thoroughly infiltrated the Faculty and are well prepared to take over.

"To bring you greetings from the Faculty is not as easy, because there are so many who are new. Also, because as a body they have already greeted you — 39 years ago, and with no particular enthusiasm because they were, at the time, preoccupied with their own dissensions.

"Peculiarly," Professor Allis continued, "you arrived by boat from Seattle, showing due skepticism of the future of travel by rail, but in keeping with the traditions of M.I.T., which came to these shores by barge from Boylston Street.

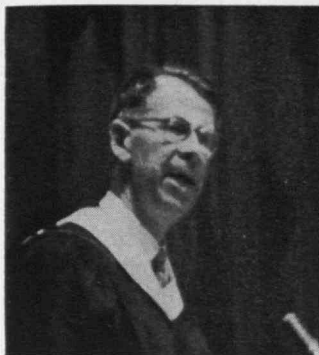
"As you sailed from the northwest, I sailed from the French Riviera, and we landed in the Great Court, which then as now was troubled by humidity. But this had been corrected by carting in pebbles to cover the clay, for there was no grass or other culture in this Great Court, and little behind these walls. Engineers were then the laboring sons of necessity rather than creative sons of knowledge and imagination.

"In these surroundings you and I matured, and rebelled at what was lacking, but did not run away because we had faith in the future of M.I.T.

"But we did need refreshment. Zurich was such a refreshing experience for you, as Munich was for me. We both brought something back and we must remember what it was, as times have changed and we can now return the gift.

"For us, 1929 was not the year of a stock crash, but the year of a trip down the Yukon in a rowboat, driven it seemed by the buzzing of mosquitoes.

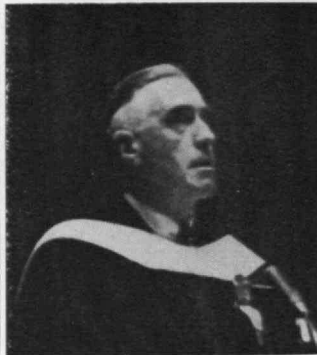
"In 1932 we rode ponies in Ecuador, over 16,000 feet above the sea, to the glacier almost on the Equator where the city of Quito got its ice. You and I rode dugout canoes down a jungle river where the woods were full of stinging ants, and bees, and gorgeous butterflies. We visited the huts of the head-



Claude Seippel
Swiss Federal Institute



Charles E. Odegaard
University of Washington



John J. Wilson, '29
The Alumni



Christopher R. Sprague, '60
The Students

hunting Indians who wore toucan feather head-dresses, and who offered us the trade of two giggling Indian girls for our single rifle. I am strangely reminded of that primitive deal when Gromyko offers a deal on Berlin.

"We took two girls on our next adventure, and they found themselves on a rugged but beautiful motor trip from Geneva to Istanbul, through frontiers which would now be closed to us. These two girls are with us today and we greet Catherine as our beautiful and charming first lady.

"I mention these adventures to give my junior colleagues a picture of you which they cannot get from circumstances of pomp, and to say that this spirit of imagination and adventure is needed also in education and research, and together with your other qualities, gives us great confidence in your leadership.

"Of course, you also know us well, and there may be the rub! There is no problem which you cannot give to a Faculty committee! There is culture now among us; and Institute Professors, and countless Deans. The material is here. It is where we go that is not clear."

The Students' View

A student, Christopher R. Sprague, '60, was the second speaker, and he emphasized the new President's dedication to teaching.

"We feel that an Alumnus has special insight into the affairs of the Institute," he said, "particularly as they bear on the life of the undergraduate. It is doubly pleasing to see that both the new President and the new Chairman of the Corporation are Alumni. Such continuity is invaluable, because the development of this university, and indeed, of man himself, is an evolutionary process. The needs of each generation are not wholly different from those of the previous ones, and events tend to repeat themselves."

The Alumni Are Proud

Speaking next on behalf of the Institute's 50,000 Alumni was the 65th President of their Association, John J. Wilson, '29. "Our Alumni Association is 84 years old," he observed, "yet it has been my unique privilege to have been the first of its 65 Presidents to serve under the only two M.I.T. Presidents who were fellow Alumni.

"Testimony that our M.I.T. has come of age is all about us, but nowhere is this testimony more impressive than in the realization that at long last we are developing our Presidents from within our own Alumni ranks. Now, and for the first time, our President is an Alumnus and, as well, a former member of our Faculty.

"Contrasted to an alumni membership of less than 50 per cent in the M.I.T. Corporation 50 years ago, now more than 75 per cent are Alumni.

"This doesn't at all mean that it has become easier for an Alumnus to be elected President of the Institute. Indeed, the system works exactly the other way around. For, although the Alumni of any university hold each other in the deep respect to which each is obviously justly due, it is at the same time a super-critical respect. It is plain to all of us that for an Alumnus to be elected President of his Alma Mater he must be a whole lot better equipped than any other possible candidate. This is the way it has been working at Harvard, going all the way back to '72 - 1672, that is. Dr. Pusey is the current model. He clearly demonstrates that this program is still working excellently. It was surely the way it worked in the case of your election, Dr. Stratton, and just as surely so in the case of your able and devoted predecessor, Dr. Killian.

"All of us look forward to hearing from the senior officers of the other great universities which you attended - in the one instance as an undergraduate and in the other in pursuit of your doctor's degree. Your election to the presidency of M.I.T. is indeed a great tribute to each of these universities and to their alumni. I cannot help but point out, however, that it is our Alumni who have had the opportunity to watch you all these years in your progress from student to instructor, through the various ranks of professorship, to provost, to vice-president, to chancellor, and now to the presidency. It is we who know at first hand that in each of these capacities you have demonstrated the breadth of your ability and the warmth of your personality. It is we who learned so early of your loyalty and devotion to the founding principles of our M.I.T. It is we who first developed the highest respect and admiration for you as a scientist, as an educator, and as an administrator. It is, therefore, logical for our Alumni to be so completely relaxed in the knowledge that you are our President and all of us are happy and honored that this is so."

Speaking next, for the country's colleges of engineering, was Lee A. DuBridge, President of the California Institute of Technology.

A Technology Axis

"You realize," he explained, "that no one asked the colleges of engineering if they wished me to speak for them — and, of course, not knowing I was to represent them, none of them told me what to say. But you certainly know that this is just a normal piece of academic hocus-pocus. College presidents are always being called upon to speak for other college presidents — and sometimes they speak for each other even when not called upon.

"However, when the occasion is that of bringing greetings to another victim — that is, another colleague — we all speak the same language. We all pretend to feel sorry for him, while we privately envy him and publicly congratulate him. On behalf of all colleges, I offer now the public congratulations. And also, if I may be so bold, I would like to bring the greetings of all college presidents' wives to M.I.T.'s new first lady, Kay Stratton.

"Everyone knows, of course, that there is just one Institute of Technology in the United States and that it has one branch in Cambridge, Mass., and one in Pasadena, Calif. As a representative of the southwest end of the Cal Tech-M.I.T. 'axis,' I take special pleasure in bringing greetings to the northeast end. An axis, you know, just has two ends — two poles, if you wish. We do not have to specify which is the head or which the tail. I must confess, however, that whatever may have been the situation in the past, the northeast pole of this axis seems now determined to clinch its claim to being called the 'head.'

"If M.I.T. insists on trying to remain the leading college of science and engineering in the world, then, in all seriousness, I insist that you must continue to bear in the future — as you have in the past — a grave responsibility. The task of leadership is never an easy one — for an individual or an institution. And yet the world of American education sorely needs today the best leadership that can be found."

Dr. Bush Describes Organization

For Vannevar Bush, '16, Honorary Chairman of the Corporation, who stepped forward after President DuBridge had spoken, there was prolonged applause. He said:

"The organization of American universities, by and large, is a strange and wonderful thing. The President is often expected to be a paragon, a Solomon in the morning and a William Jennings Bryan in the evening, with no real support in either capacity. On close scrutiny, it is often impossible to distinguish in the organization between line and staff, and sometimes it is difficult to tell who is really running the show. Back-seat driving on the part of energetic trustees is not unknown, even in the best of institutions.

"It is for this reason that men who transfer from business or military affairs into academic administration become bewildered. It is also the reason that the life expectancy in office of college presidents,

especially in state institutions where the political influence sometimes enters, not to say barges in, is a very few years. The organizational situation, and the fact that it is recognized among potential candidates, accounts for the scarcity and elusive nature of college presidents.

"Now a certain amount of confusion in academic organization is inevitable; it is even desirable. To graft onto a university the scheme of government which works well in industry is stifling. To use the military form is suffocating. The nuances of division of responsibility between trustees and faculty are not paralleled elsewhere. Any great educational institution must have on its staff many creative individuals who take orders from no one, who are even allergic to suggestion, and who are controlled or influenced only by public opinion among their colleagues. In the military sphere, once a decision is made all support it; in a college the announcement of a decision often merely starts the argument.

"Here at M.I.T. we pride ourselves that we have learned to fit effectively into modern complex national life, in relations with government or business, to have become reasonably efficient in internal organization, without losing the essential characteristic of a university as a company of scholars, which holds creativeness, independence, intellectual leadership, to be far more important than mere orderliness.

"This present move is a further step in that direction, as we hail a new president about whom this great institution will now revolve. We are very lucky indeed to have him. We do not wish to kill him off, nor do we wish to harass him so that he cannot think. We wish to arrive at a situation in which he, and the gracious lady by his side, will actually enjoy the years ahead. This calls for wise, effective internal

(Continued on page 526)



President and Mrs. Stratton greeting friends in the lobby

1300 Attend Alumni Banquet

**M.I.T. Classes of 1909, 1919, and 1934
announce gifts of more than \$300,000**

At the 84th annual banquet of the Alumni Association in the Rockwell Cage on June 15:

■ A large silver tray bearing the autographs of 325 members of the Class of 1926 was presented to Chairman James R. Killian, Jr., '26, of the Corporation, and to Mrs. Killian.

■ A certificate of honorary membership in the Alumni Association was presented to Mrs. Julius A. Stratton.

■ The Classes of 1909, 1919, and 1934 announced gifts of more than \$300,000 to the Institute, and President John J. Wilson, '29, announced that for 1958-1959 total Alumni benefactions to the Institute would exceed \$4,600,000, including more than \$560,000 received through the Alumni Fund.

■ Edward J. Hanley, '24, took office as the 66th President of the Association after many years of service to the Institute in other capacities, and an "apprenticeship" as President of the alumni of the Harvard Business School.

Classmates' Appreciation

With the tray presented to Dr. and Mrs. Killian went a beautiful silver service and letters from 325 of his classmates, now in many different parts of the world, expressing their friendship and appreciation of his work for M.I.T. and the nation. For this "nice surprise," Dr. and Mrs. Killian were escorted to the platform by I. Austin Kelly, 3d, and David A. Shepard, and the presentation was made by Mr. Kelly.

Mrs. Stratton was escorted by Horatio L. Bond, President of the Class of 1923, to receive her honorary membership certificate. She served for three years as chairman of the Technology Matrons' Survey Committee and is now honorary chairman of the Technology Matrons.

Mr. Wilson then introduced the representatives of the three classes making gifts. For the Class of 1909, Maurice R. Scharff announced that its reunion gift was \$132,794.62, and that the total contributed by this Class since 1940 had passed the \$300,000 mark. For the Class of 1919, Wilfred O. Langille announced a gift of \$71,000. This was the first time that a 40-year class has made such a gift, and Mr. Langille expressed the hope that a precedent was being established which others would follow. For the Class of 1934, Henry B. Backenstoss announced a gift of \$126,000 to be used for scholarships in memory of the late President Karl T. Compton. This was the largest gift ever made by a 25-year class, and Mr. Backenstoss said it was a challenge to other classes.

President Stratton thanked the classes warmly for these gifts and told the assembled Alumni: "It would



David A. Shepard, '26, escorting Dr. and Mrs. Killian

be impossible for us to carry out our mission without your help."

Through the Alumni Fund, Mr. Wilson reported, the Institute will receive almost 50 per cent more this year than it did three years ago. Fifteen thousand Alumni contributed to the Fund this year, he said, and it now ranks among the top 10 alumni funds in the country. There was a 25 per cent increase in the amount contributed and a 12 per cent increase in the number of participants this year.

The Pops Concert

Mr. Hanley, the new President, spoke highly of the work of the retiring officers and adjourned the meeting so that the 1,300 guests at the dinner could reach Kresge Auditorium in time for the Boston Pops Concert conducted by Arthur Fiedler.

At this concert, the soloist in the Piano Concerto in B-flat minor, No. 1, Op. 23, by Tchaikovsky, was Earl Wild. His and other numbers were applauded enthusiastically, the orchestra gave several encores, and the big day ended, as have other Alumni Days, with the singing of the "Stein Song."

The Bush Room Is Dedicated

Friends greet the Honorary Chairman
of the Corporation in a new setting

THE newest and one of M.I.T.'s most attractive rooms, the Vannevar Bush Room, was dedicated on Alumni Day. Dr. Bush, the Honorary Chairman of the Corporation, was present and spoke briefly. Dr. Stratton, the new President, and the new Dean of the School of Engineering, Gordon S. Brown, '31, both participated in the ceremony.

A nearly life-size photographic portrait of Dr. Bush by Yousuf Karsh of Ottawa is the room's central decorative feature. This picture was also the frontispiece of a 41-page bibliography of Dr. Bush's work which the guests received as "A Keepsake in Honor of Vannevar Bush."

"I will be very pleased," said Dean Brown, "if the level of excellence with which we conduct our task as educators measures up to the high standards of the contributions and the service that Vannevar Bush has rendered to the nation, to his community, and especially to M.I.T. I hope that the excellence of the design of the room and its appurtenances will set a standard for all categories of users."

The Department of Electrical Engineering will use this room for its Faculty meetings, technical conferences, colloquia, and other gatherings with students.

This Department now has 75 professors, 20 instructors, 60 graduate teaching assistants, 175 graduate research assistants, and about 1,200 undergraduate and graduate students.



Dr. Bush beside his portrait and (below) with friends

"During my student days," Dean Brown recalled, "Dr. Bush was my teacher and counselor. I remember well the days of his differential analyzer. To his vision and leadership, the Department owes much of its greatness, and as a consequence finds itself the largest Department at the Institute."

Dr. Bush responded by expressing the hope that a new generation would find friends in this room as fine as those he had found during his 40-odd years at the Institute.

The oak-paneled, 45 by 50-foot room on the first floor of Building 10 was designed by Herbert L. Beckwith, '26, and Richard C. Reece, '50, of the architectural firm of Anderson, Beckwith and Haible. Its ceiling is both translucent and sound absorbent, and conceals the lighting and air-conditioning. This ceiling material is set in rectangles that are an adaptation of Japanese shoji design. There is a white chalkboard and a concealed high-fidelity sound system in the room; a lounge area, and kitchen and dining facilities which adjoin it, are additional functional features.

Sixty-one individuals and industries contributed funds and equipment for the new room.





The Trend of Affairs

To Canada via the Moon

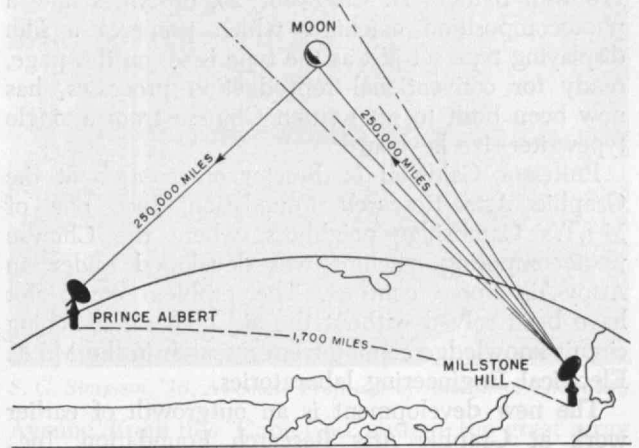
■ President Eisenhower sent greetings on June 6 to Canadian Prime Minister Diefenbaker over a moon-bounce relay radiotelephone circuit almost 500,000 miles long for the opening of the Prince Albert Radar Laboratory. The radar at Prince Albert in Saskatchewan is a twin of Lincoln Laboratory's Millstone Hill radar which recently made contact with the planet Venus. It was designed and installed by Lincoln for the Air Research and Development Command of the U.S. Air Force. Under an international agreement between the Air Force and Canada's Defence Research Board, Canada provided all other site facilities at Prince Albert, and will staff and operate the new laboratory in a radar research program co-ordinated by Lincoln Laboratory and the Defence Research Telecommunications Establishment in Ottawa. The Canadian site was chosen for studies of radar detection of missiles and aircraft in the presence of the aurora borealis.

The President's message, taped in his office at the White House, was beamed at the moon from the Millstone Hill Radar Observatory, using suppressed-carrier single-sideband modulation techniques pioneered by Lincoln Laboratory in the ultra-high-frequency range. Every word was intelligible at Prince Albert, 1,700 miles away by the great circle route, after the message had traveled a distance equal to 20 times around the earth. The message was recorded at Prince Albert and made available by the White House to U.S. radio and television networks.

The President noted in his message that the completion of the Prince Albert Laboratory "constitutes another major advance along the road of co-operative ventures between our two countries in defense research and other fields," and that "the work of this laboratory cannot fail to make a significant contribution in future years toward the solving of mutual problems." He also said: "The transmission of this message by way of the moon, a distance of almost half a million miles, emphasizes the technical importance of your new laboratory and is a specific illustration of the scientific co-operation between Canada and the United States."

Dr. Land's Work on Color Vision

■ Edwin H. Land, the scientist whose lecture two years ago was quoted by President Stratton in his inaugural address, received an honorary doctor of science degree that same weekend from Northeastern University. Dr. Land is president of the Polaroid Corporation and has been a visiting Institute professor at M.I.T. since 1956. His recent work on color vision, reported in the *Proceedings of the National Academy of Sciences*, was the subject of major articles in the May issues of both *Scientific American* and *Fortune*.



"A theory of color that has stood for nearly 300 years has suddenly been overthrown," *Fortune* said. "By using black-and-white photographs in combination with various filters, or light sources, Land can produce images of scenes and objects that appear to possess their original gamut of color — yet, according to classical theory, only one or, at most, two colors are 'really' present."

"The eye makes distinctions of amazing subtlety," Dr. Land himself wrote in *Scientific American*. "It does not need nearly so much information as actually flows to it from the everyday world. It can build colored worlds of its own out of informative materials that have always been supposed to be inherently drab and colorless."

The History of Machine Tools

■ Robert S. Woodbury, '28, Associate Professor of the History of Technology, will be collecting information in European plants and museums this summer for a projected five-volume *History of Metal Cutting Machine Tools*. He helped the DoALL Company prepare a permanent exhibition of technological history which was formally opened this summer in Des Plaines, Ill. Another of his monographs about particular tools — this one deals with the grinding machine — is being published this summer by the Technology Press, and the Wilkie Foundation of Des Plaines has made a five-year, \$35,000 grant for the continuance of his studies.

Professor Woodbury was impressed by the need for a history of the tools that made mass production possible while serving as Curator of the Division of Engineering at the Smithsonian Institution in Washington. The political, economic, and social aspects of the industrial revolution have been thoroughly explored, he contends, but no good study has been written from a technological point of view. "I want to convince economic historians," he says, "that this can and should be done. At least a few people are beginning to realize that this is really something worth doing."

Chinese on a Keyboard

■ The logic generated by thousands of tiny relays and switching circuits has now surmounted the problem of rapidly keyboarding Chinese, one of the world's oldest and most complex languages.

In the *Journal of the Franklin Institute* for June, Professor Samuel H. Caldwell, '25, describes how a photocomposition machine, which prepares a film displaying type set just as the type is set on this page, ready for conventional reproduction processes, has now been built to set written Chinese from a single typewriter-size keyboard.

Professor Caldwell is director of research at the Graphic Arts Research Foundation, Inc., one of M.I.T.'s Cambridge neighbors, where the Chinese photocomposing machine was developed under an Army-Air Force contract. The problem could not have been solved without the aid of basic switching circuit knowledge coming from research in the M.I.T. Electrical Engineering laboratories.

The new development is an outgrowth of earlier work at Graphic Arts Research Foundation, Inc., which has resulted in photocomposition equipment for our conventional 26-letter alphabet. But an effective typesetting machine for Chinese must have access to 6,000 to 8,000 ideograph characters.

The problem became possible of solution when Professor Caldwell discovered two characteristics of Chinese: (1) Although Chinese appears to be composed of these several thousand different characters, it in fact has an "alphabet" of 21 basic strokes which are combined in different ways to form the many ideographs; and (2) Chinese has a "spelling" in the sense that the sequence of strokes used in forming a given character is invariant among all Chinese. These two facts make possible the encoding of individual characters on the basis of their unique stroke sequences known and used by all who have learned to write Chinese. Stroke and sequence are translated into a digital code, and one circuit of several thousand alternatives in the machine is actuated as soon as one character is uniquely described by the digital code. Since this unique description may occur before the character is in fact complete, the operator may sometimes have the unusual experience of finding the machine displaying the desired character before he completes its spelling.

As soon as the character selection is complete, the machine automatically positions a matrix so that the desired character is on the axis of the photographic system, ready to be put on film.

Further development to perfect the present machine is now being planned. Professor Caldwell believes he

will eventually build a machine "that will permit composition in Chinese, from a keyboard, at least as fast as composition in English." The present machine has the distinction of being the first keyboard-controlled composing machine for written Chinese which can be used by Chinese-speaking operators without extensive special training.

Scientists of the Seas

■ Starting in September, five of the Woods Hole Oceanographic Institution's outstanding men will come to M.I.T. in rotation to conduct courses in oceanography and supervise thesis research. They are Columbus O'D. Iselin, Willem V. R. Malkus, Henry M. Stommel, William S. von Arx, '55, and J. Brackett Hersey. These five men will join the M.I.T. Faculty in a broad program for developing the earth sciences at M.I.T. while at the same time training much-needed oceanographers.

Professor Iselin, the Director of the Woods Hole institution from 1940 to 1950 and 1956 to 1958, was the first captain of the research vessel *Atlantis* and is noted for his studies of the Gulf Stream; Professor Malkus has been primarily concerned with developing methods of studying deep ocean currents; Mr. Stommel is the originator of a theory regarding ocean currents with which deep counter currents were predicted successfully; Professor von Arx has developed a method of measuring currents from a ship under way; and Associate Professor Hersey has been studying the geophysics of the ocean basins.

Russian Scientific Reports

■ Long before Sputnik ascended, the Institute's Library set out to improve its coverage of Russian scientific and technical work. Now it is getting more than 15 times as many Russian journals as it received in 1955. The library receives 74 journals direct from Russia and 43 from other Iron Curtain countries. It regularly translates three important Russian electronics journals into English. It is the only depository in New England for the tens of thousands of translations of Russian scientific and technical articles made by the United States Department of Commerce's Office of Technical Services. In addition, it has an exchange system with the universities of Moscow and Leningrad, the Russian Institute of Scientific Information, and eight other Russian institutions.

To arrange for the exchange of books, Secor D. Browne, Assistant Professor of Russian, went to the U.S.S.R., and Professor Alexander Mikhailov came to M.I.T. from the Russian Institute of Scientific Information. This program is especially helpful to M.I.T. because many Russian books go out of print soon after publication and cannot be obtained on the regular market. When this program is well under way, William N. Locke, Director of Libraries, expects about 500 books a year to be exchanged. There is scarcely any propaganda, he reports, in Russian scientific and technical writing.

Books cannot be removed from the M.I.T. Library without a card, but are available there for consultation by the public.

The Review is not published during the summer months following July. This issue, therefore, concludes Volume 61. Number 1 of Volume 62 will be published on October 27 and dated November. Readers who bind their copies are reminded that if they possess nine issues of Volume 61 their files are complete. An index to the volume will be ready on September 15 and will be supplied post free upon request.

Two Retire from the Faculty

■ Two members of the Class of 1916, the last class graduated from "Boston Tech" before the move to Cambridge, retired last month from the M.I.T. Faculty. They are Shatswell Ober, Professor of Aeronautical Engineering, and Stephen G. Simpson, Associate Professor of Analytical Chemistry. Both will continue to be active as educators.

Professor Ober has the distinction of being one of the first "working professors" in his young field to reach retirement age. There was no Department of Aeronautics (or Astronautics) when he was graduated, and he began his career as a hull draftsman in a Maine shipyard which was building destroyers. He became an aeronautical engineer for the U.S. Army, and was one of the users of the Institute's first wind tunnel. He has taught applied aerodynamics, written on the subject for the National Advisory Committee for Aeronautics and professional journals, and is a Fellow of the Institute of the Aeronautical Sciences.

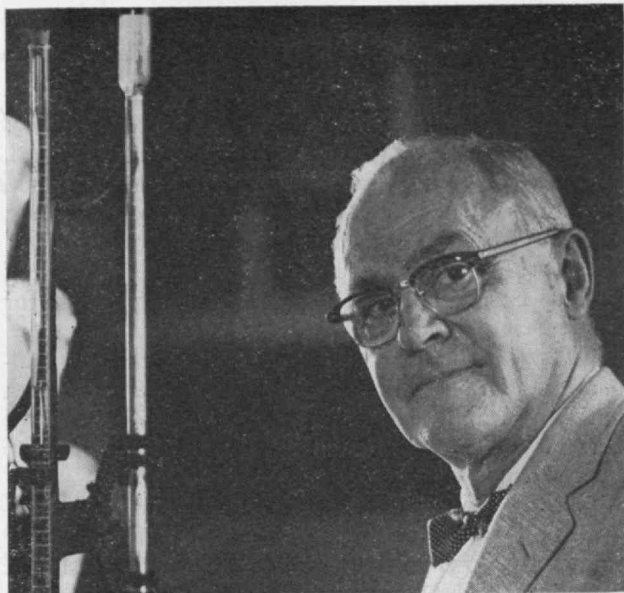
Professor Simpson helped move boxes from Boston to Cambridge, was head chemist for the Great Northern Paper Company, was in the Chemical Warfare Service in World War I, and joined the Institute's staff as an instructor in 1919. With Leicester F. Hamilton, '14, he published *Calculations of Analytical Chemistry*, and *Quantitative Chemical Analysis*. He is also an expert magician, has a pair of handcuffs used by Houdini, and received an award for not missing a meeting of the Society of American Magicians in 20 years.

Whirlwind Retires, Too

■ Whirlwind, once the nation's largest and fastest digital computer, was retired this spring. Although only eight years old, it is no match for its grandchildren.

Since the drawing board work on Whirlwind began in 1946, it has cost the government about \$7,500,000. How wise an investment was this? The Institute has trained some of America's outstanding men with the help of this electronic "beast," computations made swiftly with it have accelerated hundreds of projects, and the SAGE air defense system resulted from experiments performed with it.

In the mid-1950's information from a radar network that reached from Maine to Connecticut was fed to this computer in the Barta Building on Massachusetts



S. G. Simpson, '16, Associate Professor of Analytical Chemistry

Avenue. From this "Cape Cod" system, the great array of radar and computational apparatus for guarding the North American continent, which became operational a year ago, was evolved.

Whirlwind was modified and expanded repeatedly during its short M.I.T. career, and was the first computer to have a magnetic core memory. Soon after this improvement was made in 1954, Whirlwind functioned for six consecutive weeks, and consulted its memory more than 100 billion times, without erring. Magnetic core memories now are widely used.

Its thousands of tubes, lights, knobs, dials, and miles of wiring made Whirlwind look more gee-whizzy than its more compact, faster, and more economical descendants. Commercial computers now are superior to it in many ways. Lincoln Laboratory, which was its principal user toward the end, now has several transistorized computer systems, and no longer needs this historic giant.

F. Leroy Foster, '25, Director of the Division of Sponsored Research, therefore asked the Office of Naval Research this spring what should be done with Whirlwind. Rather than let its parts be scattered by the winds of research, the government now is arranging to lease the famous old computer to the William M. Wolf Company of Boston.



Photographed at a dinner honoring Professor Shatswell Ober, '16, were (from left to right): Jerome C. Hunsaker, '12, John R.

Markham, '18, Professor Ober, and Charles S. Draper, '26. Every member of the Aeronautics Department was there.

Individuals Noteworthy

■ Noteworthy Alumni appointments, elections, and promotions announced recently are recorded below:

Robert T. Haslam, '11, as a Director of Eurofund, Inc. . . . *Robert L. Sumwalt*, '20, as the 22d President, the University of South Carolina . . . *Harold L. Humes*, '22, as President, Building Research Institute . . . *F. Leroy Foster*, '25, as a Director of the Engineering College Research Council of the American Society for Engineering Education;

Gilbert M. Roddy, '31, as a Director, Sanborn Company, Waltham, Mass. . . . *Willem Holst*, '32, as a Director, Standard-Vacuum Oil Company . . . *Alwin B. Newton*, '32, as a Vice-president, York Division, Borg-Warner Corporation;

James J. Robson, '32, as Director of Tire Engineering and Development, Firestone Tire and Rubber Company . . . *Gordon L. Way*, '34, as Vice-president, Canadian Bechtel, Ltd. . . . *William H. Austin*, '37, as President, Connecticut Building Congress;

Richard M. Crossan, '40, as Executive Vice-president, Serge A. Birn Company, Inc., Louisville, Ky. . . . *James H. Moore*, '40, as a Director, National Research Corporation . . . *Richard T. Orth*, '40, as Vice-president in Charge of Planning, Eitel-McCullough, Inc.;

George S. Cherniak, '41, as Director, Space Technology Laboratories Flight Test Operations, Atlantic Missile Range, Cape Canaveral, Fla. . . . *Walter J. Kreske*, '41, as President, Massachusetts Society of Professional Engineers . . . *Jerome T. Coe*, '42, as General Manager, Silicone Products Department, General Electric Company, Waterford, N.Y.;

Irénée du Pont, Jr., '43, as a Director, E. I. du Pont de Nemours and Company . . . *Jose M. Corbella*, '46, as Vice-principal, St. Xavier's College, Bombay, India . . . *Kermit Greene*, '47, as Vice-president and Assistant General Manager, Eastern Division, Sherman Paper Products Corporation, Newton Upper Falls, Mass.;

Richard H. Harris, '48, as Assistant Treasurer, Norton Behr-Manning Overseas, Inc. . . . *Robert A. Arrison, Jr.*, '49, as Vice-president for Engineering, Keleket X-Ray Corporation, subsidiary of Tracerlab . . . *Italo S. Servi*, '49, as Director of Research, Metals Division, Kelsey-Hayes Company;

Osmund T. Fundingsland, '50, as Director of Research, Raytheon Manufacturing Company . . . *Raymond C. Quick*, '50, as Vice-president, Feedback Controls, Inc. . . . *John F. Dunn, Jr.*, '51, as Chief Engineer, Walworth Company . . . *Robert W. Miller*, '52, as Vice-president, Eastman Kodak Company.

■ Special honors and awards given to Alumni recently include:

To *Edward C. Wente*, '14, the Gold Medal of the Acoustical Society of America . . . to *Thomas D'A. Brophy*, '16, its first annual award for distinguished service, by the Advertising Federation of America . . . to *Herbert J. Gilkey*, '16, Honorary Membership, by the American Concrete Institute;

To *John R. Coffin*, '17, the grade of fellowship, by the American Institute of Electrical Engineers . . . to *Augustus B. Kinzel*, '21, the Medal for Powder Metallurgy, by Stevens Institute of Technology . . .

to *Peter T. Lamont*, '22, designation as Commander, Order of Merit of the Italian Republic . . . to *Fritz J. Roethlisberger*, '22, the Ledlie Prize, given every two years to the individual at Harvard who "has by research discovered or otherwise made the most valuable contribution to science, or in any way for the benefit of mankind," by Harvard University;

To *Michael L. Radoslovich*, '26, the grade of fellowship by the American Institute of Architects . . . to *Gordon S. Brown*, '31, the 1959 Lamme Medal, for "distinguished service in engineering education," by the American Society for Engineering Education . . . to *John W. Leslie*, '32, Outstanding Performance rating, by the Engineering Division, U.S. Army . . . to *William R. Hewlett*, '36, the grade of fellowship, by the American Institute of Electrical Engineers;

To *Robert L. Lichten*, '43, the Klemin Award, by the American Helicopter Society . . . to *Victor H. Pomper*, '48, designation as one of the 10 outstanding young men of Greater Boston for 1958, by the Boston Junior Chamber of Commerce.

■ *Honoris Causa:*

By the University of Alabama, a doctorate of science, to *James R. Cudworth*, '21;

By Boston College, a doctorate of laws, to *Ernest Henderson*, '21;

By Boston University, doctorates of science, to *Van-nevar Bush*, '16, and *James M. Faulkner*, Medical Director at M.I.T.;

By Gallaudet College, a doctorate of letters, to *Howard M. Quigley*, '32;

By Harvard University, a doctorate of laws, to *Julius A. Stratton*, '23;

By Iona College, a doctorate of laws, to *John F. Hennessy*, '24;

By Lowell Technological Institute, a doctorate of science, to *Robert C. Sprague*, '23;

By New York University, a doctorate of laws, to *James R. Killian, Jr.*, '26;

By Springfield College, a doctorate of laws, to *Luis A. Ferre*, '24;

By Transylvania College, a doctorate of laws, to *Caruthers A. Coleman*, '16;

By Tufts University, a doctorate of laws, to *Robert C. Sprague*, '23.

On the Nature of Stall

■ Stephen J. Kline, '52, will receive the Melville Medal of the American Society of Mechanical Engineers, one of the highest honors in his profession, this year for his work "On the Nature of Stall." Dr. Kline is associate professor of mechanical engineering at Stanford University, and will continue this fall to direct research there such as that done on the internal flow of liquids and gases which is described in the paper for which he is being honored. This research at Stanford already has resulted in improved design methods helpful to manufacturers of jet engines and other machinery. Dr. Kline also is a consulting editor for a McGraw-Hill series of publications on mechanical engineering.

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This Year's Commencement Exercises

M.I.T. awards nearly as many advanced degrees as bachelor's degrees in impressive 1959 ceremonies



THE Massachusetts Institute of Technology awarded 1,252 degrees at its 93d commencement exercises to students from 41 states and 48 foreign countries. Nearly half were advanced degrees; 661 were bachelor's degrees, 438 were master's degrees, 53 were engineer's degrees (between master's and doctor's) and 100 were doctorates. Eighty members of the graduating class each received two degrees.

When John J. Wilson, '29, President of the Alumni Association, placed the mace on the table at 10:30 A.M., on June 12 for the commencement ceremonies, the Rockwell Athletic Cage was thoroughly filled as usual, and scores of additional friends of the Institute and the graduates were watching in Kresge Auditorium via television. Facing the Class of 1959 with James R. Killian, Jr., '26, Chairman of the M.I.T. Corporation, who presided, were 240 members of the Institute's Faculty, 37 members of the Corporation, 30 members of the Class of 1909, and 24 other guests of honor.

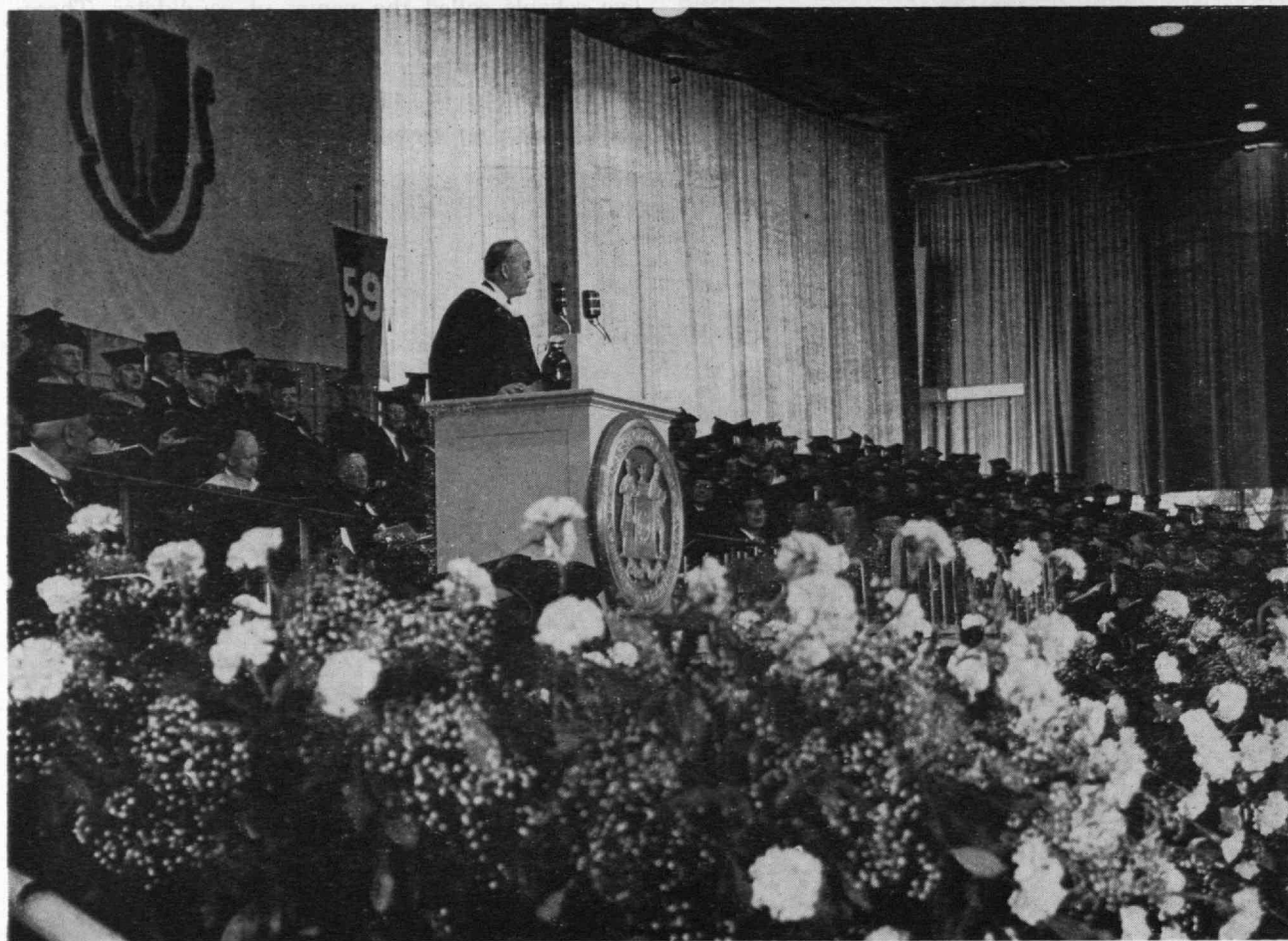
President Julius A. Stratton, '23, presented the diplomas as a representative of each of the Institute's five schools called the names of candidates. Those from the School of Architecture and Planning were called to the rostrum by Dean Pietro Belluschi, those from the School of Engineering by Associate Dean H.

The Alumni Association President was Chief Marshal, and class officers (below) led the graduates in the academic procession.





The Class of 1909 heeded the words of Dr. John Cowles, publisher (below) who delivered the address to the Class of 1959.





Each graduate received his diploma from President Stratton.

Guyford Stever, those from the School of Humanities and Social Studies by Dean John E. Burchard, '23, those from the School of Industrial Management by Dean E. P. Brooks, '17, and those from the School of Science by Dean George R. Harrison. Investors of the hood were Harold L. Hazen, '24, Dean of the Graduate School, and Philip M. Morse, Chairman of the Faculty.

The commencement address was given by John Cowles, President of the Minneapolis Star and Tribune Company. In introducing him, President Stratton spoke highly of his career as a newspaper publisher in Des Moines as well as Minneapolis, his interest in education, and his work for the Ford Foundation.

The Harry Manley Goodwin Medal, which is awarded annually for conspicuously effective teaching, in memory of the first Dean of the M.I.T. Graduate School, was presented by Dean Hazen to Harry B. Lee, Jr., a graduate student and teaching assistant in the Department of Electrical Engineering.

"Mr. Lee," said Dean Hazen, "was recommended by the Faculty and students for the extraordinarily high caliber of his teaching, including unusual perceptiveness of students' needs. He is, however, but one of a number of gifted young graduate students who are doing superior teaching of the M.I.T. undergraduate courses."

The invocation was given by the Reverend Henry Horn of the University Lutheran Church, and the charge to the graduates, after the presentation of diplomas and hoods, was given by Chairman Killian.

The principal addresses of Commencement Week were the baccalaureate address given by Pietro Belluschi, Dean of the School of Architecture and Planning, the Commencement Address by John Cowles, President of the Minneapolis Star and Tribune Company, and the Charge to the Graduates by James R. Killian, Jr., '26, Chairman of the M.I.T. Corporation. The texts of their addresses are in the pages that follow this pictorial report.

All but 10 of the candidates for degrees this year were men. Of the women, seven were wives of M.I.T. men and one is engaged to an M.I.T. man. One couple, Mr. and Mrs. Joseph E. Johnson, who were graduated together previously from Iowa State College, received doctor's degrees in chemistry together.

As Chief Marshal, Mr. Wilson was assisted by Joseph J. Snyder, '44, Vice-president and Treasurer of M.I.T., as Marshal of the Corporation; Maurice R. Scharff, as Marshal of the Class of 1909; Stephen H. Crandall, '46, as Marshal of the Faculty; John B. Rae, as Faculty Marshal of the Graduates; and William H. Carlisle, Jr., '28, as Marshal of the Audience. Leading the degree recipients in the academic procession were their class officers: Richard L. Sampson, President; Buddy J. Long, Vice-president; Robert Muh, Secretary-Treasurer, and Laurence H. Bishoff, Senior Marshal. Careful planning and close timing gave almost military precision to the proceedings despite the great number of persons taking part.

Music for both the commencement exercises and the baccalaureate service on the preceding day was furnished by Victor H. Mattfeld, organist, and the M.I.T. Brass Choir conducted by John D. Corley, Jr. The reading from the Scripture at the baccalaureate service was by the Class President, Mr. Sampson, and the invocation and benediction were given by President Stratton.

The traditional luncheon for the graduates was served in Du Pont Court following the commence-

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Thomas C. Desmond, '09, spoke at the Commencement Luncheon. Mrs. Killian is at left and Dr. Stratton in center.



Mrs. Julius A. Stratton was in the receiving line, with others who are seen below.



The Charge to the Graduates

"Each of you, by enhancing the excellence and dignity of your own life, can contribute to the quality and dignity and strength of our national life."

by **JAMES R. KILLIAN, JR.**, Chairman of the M.I.T. Corporation

FOR the past two years I have been engaged in mobilizing scientific and engineering advice and analysis for President Eisenhower and have observed at first-hand the complex problems our nation faces day by day, and the vital part which science and engineering play in our security and our public policy-making. Out of this intense experience have come some deeply felt convictions, a few of which I report to you today.

The United States must summon all its latent strength and all of its adaptability if it is to meet the rapid changes, the threat of unprecedented dangers, the abiding menace, and the vast responsibilities we face today. We must operate at peak performance, we must be willing to make sacrifices; these, no less, are the requirements both for leadership and survival in a divided world in a nuclear age.

This is the lesson, my friends, that we are painfully learning today, that the cold war, no less than a shoot-

ing war, requires America to be a taut ship, firm in its course and purpose, vigorous and disciplined in its life and work, adventuresome and revolutionary in its creative activities.

Our vitality and sense of purpose are under test. The "protracted conflict" between democracy and communism requires democracy to be strong and tautly alert both with its shared convictions and principles as well as with its military forces and weapons.

No informed human being can feel himself disengaged from the effects of government actions, both of his own and other governments, and as a consequence every person should recognize his involvement and responsibility in the course of events. In a period of total weapons, we must recognize the possibility of total decisions and total ideas, the mass effects of which may leave no one untouched or no civilized society unaffected. We live also in a period of such potential

President Eisenhower's Tribute

When James R. Killian, Jr., '26, resigned this spring as President Eisenhower's Special Assistant for Science and Technology after many months of strenuous service, the President wrote to him:

It would be impossible for me to overemphasize the vital importance of your work here, both to the future security of the United States and to the strength of a large and fundamental section of our whole system of education. Yours has been a wide and deep understanding of needs in these interdependent areas. Through your experience and clear judgment, brought to bear on many complex problems, you have been of inestimable help to me and to many other officials having responsibilities in these areas. The work of the Science Advisory Committee, in which I know you have played an effective part, has already produced results that should have lasting value to the nation. I might add in this connection that your own service in education and government exemplifies that quality of excellence which the committee has rightly sought to encourage in many of its recent studies and reports. . . . With my personal thanks for your devoted public service, permit me to express also the appreciation of a grateful nation.

The charge to the M.I.T. graduates, published here, was one of Dr. Killian's first addresses following announcement of his return to Cambridge to devote himself to his duties as Chairman of the Corporation.



instability that small effects or vagrant forces have the possibility for causing large effects both good and bad.

With all of these conditions confronting us, the United States must seek with vigor and resource to build superior "equipment for peace" as well as superior equipment for defense, and resolutely seek to reduce without appeasement the tensions and forces, both large and small, which might imperil the peace.

These convictions reflect no estimate of weakness or any sense of fear. They suggest to me that we go forward with zest and awakened purpose, free both of panic and apathy, feeling the exhilaration of great exertion and great responsibility.

From these convictions come the things I would say to you today.

MY WISH for you, first, is that you can avoid the apathy and indifference to national problems which is all too common today among many citizens. Apathy comes in part from the absence of any image, especially any large and exciting concept, of where we want to go and what we want to be. We need people who do not alternate, because ill-informed, "between panic and apathy," but who are informed and who think seriously and responsibly about the great issues — our need, for example, to achieve enhanced excellence in our system of education, our need to enlarge our investment in human resources as we augment our investment in material resources, our need to accept the responsibilities and the sacrifices required to be strong and to keep the peace in a divided world.

My wish, next, is that many of you will have the motivation and the opportunity to contribute, through your work, however specialized, to the effective use of science and engineering and the other professions represented among you in shaping public policy and in evolving our social strategy. We need statesman-scientists and statesman-engineers — men who become molders of opinion and public leaders, who make a vital contribution to the common account, because they are, first of all, scientists and engineers and possess the insight and understanding of their specialties. We are now in a period when science and engineering are major influences on domestic and foreign policy and in turn are greatly affected by such policy. Yet there is a great shortage of men and women with adequate scientific understanding who can be or are willing to try to be effective in the political and policy-making arena. We need more scientists and engineers with the education, competence, and motivation for foreign service. We need more who have the breadth and the special understanding to help in dealing wisely with the multiplying technico-political problems in our government. I hope that many of you will have an opportunity and the will to contribute to public policy-making and to the public philosophy in the years ahead.

I would remind you, next, that we are the inheritors of a very ancient faith — a faith in the primacy of man as a person. This faith has been a cornerstone of Western society and has been valiantly affirmed through deeds and words throughout its existence. The concept that might does not make right, that there is in each individual human being a worth that must be respected, that freedom is better than unfreedom, has

been affirmed and reaffirmed in many parts of the world over and over again. But the persistent reappearance of tyrannical rule, of the philosophy that careers should be determined by the class or race into which you are born instead of by natural endowments and acquired talents, the belief that men are made to serve the state rather than that the state exists to serve man, shows that Goethe was right in saying: "What our fathers have bequeathed to us, we must earn anew if we are to possess it."

It is my earnest hope that you will share diligently in earning anew these priceless bequests.

If we are to live in peace and freedom, it will only be because there are enough people who care enough and who know enough to make the effort which freedom and truth and moral law require. It will be because there are men and women who can break through apathy and indifference and enjoy the exhilaration of intense and purposeful effort.

My wish and hope is that you will mobilize your talents, education, and personal force both to demonstrate and support the sacred value of the free mind and the free spirit, and the significance of individual man as a human being. You can play a major role in this great mission.

AND now a more personal word. Whatever may befall you on your journey through life, success in the deepest and truest sense will be found in the dignity and poise which you reveal in meeting both the failures and the successes of life. It will be found in your perception and acceptance of high standards and ideal aims. Your success will reside especially in your relations with people, in your capacity to be compassionate as well as steadfast, tender as well as high-minded in your loyalties and your allegiances. Each of you, by enhancing the excellence and dignity of your own life, can contribute to the quality and dignity and strength of our national life.

As Dr. John Gardner recently said, "Every good man strengthens society. In this day of sophisticated judgments on man and society that is a notably unfashionable thing to say. Men of integrity, by their very existence, rekindle the belief that as a people we can live above the level of moral squalor. We need that belief: a cynical community is a corrupt community."

I record these observations about the special conditions and opportunities which you face by way of expressing our confidence in you and in the adventuresome future which lies before you.

We who continue here shall always be glad for the days we have worked and lived together with you, always cherish the privilege of having had you as members of this community of scholars, always rejoice in your progress and accomplishments. We salute you for your record as students and as citizens of this community. We speak our admiration of your parents for their contribution to your success. We celebrate with them and with you this day of fulfillment and hopeful beginnings.

With these sentiments of pride and leave-taking, of affection and felicitation, and cherishing your continued affiliation with this institution, we bid you God-speed and farewell.

The Future Is Now

The rising population of the world has made imaginative economic aid and victories over poverty essential to our survival with freedom

by JOHN COWLES

This article was drawn from the address given by John Cowles, one of America's outstanding newspaper publishers, at the Institute's 1959 Graduation Exercises on June 12. Mr. Cowles is president of the Minneapolis Star and Tribune Company and Chairman of the Board of the Des Moines Register and Tribune Company. He is a trustee of the Ford Foundation, the Gardner Cowles Foundation, Eisenhower Exchange Fellowships, Inc., Carleton College, Minneapolis Foundation, Minneapolis Art Institute, American Assembly, and Columbia University. He was a member of the National Citizens Commission for the Public Schools and the Committee for the White House Conference on Education. A graduate of Phillips Exeter Academy and Harvard College, Mr. Cowles has received a number of honorary degrees.

THERE is certainly no need of spelling out to an M.I.T. audience that we are living in a revolutionary age, the most revolutionary in all history. We are living in the midst not only of a scientific revolution, but in the midst of world-wide political, social, and economic revolutions as well.

It is increasingly apparent that we as a nation have not yet adequately adjusted our thinking to the realities that exist in the world today. We are confused and frustrated because we still instinctively cling to many outworn ideas and convictions which may have been valid at some time in the past, but which are not valid under today's new conditions.

One of our highly pressing needs is to clarify our thinking as to what our national goals are or should be, to try to reach a popular consensus of what it is that we as a nation most want in this revolutionary age of global change.

Stripped to its barest essentials, I would suggest that our basic national goal is or should be "survival with freedom."

Many Americans, I fear, do not yet fully comprehend the nature and dimensions of the various threats and problems that we face. With gross oversimplification I should like to summarize what I see as the major threats and what I think we as a nation should try to do about them.

First of all, relatively few people comprehend either the rapidity and magnitude of the current population growth throughout the world or its implications.



John Cowles

This growth in population is the natural result of what medical science and public health measures have done to eliminate plague and pestilence throughout the globe, to reduce infant mortality and lengthen the average span of human life. At the present rate of growth, the world's population, which is now estimated at about two and three-quarters billion, will increase in the next 30 or 40 years to five and a half or six billion.

The Population Problem

The underdeveloped countries are growing in population at a much faster rate than Western Europe and the United States. Forecasts indicate that before the year 2000 arrives there will be half a billion Africans and nearly four billion Asians. China alone will probably reach the billion population mark in about 10 years. In this connection you all probably know the wisecrack that an optimist is a person who is learning Russian. A pessimist is one who is learning Chinese.

Although India, for example, is making a valiant effort to step up its output of food, manufactured goods and services, and is increasing its gross national product at the rate of probably 3 per cent a year, the population growth in India is about 2½ per cent a year, so the improvement in the per-capita standard of living is extremely small, about half of 1 per cent a year. India is running as fast as it can run, but on a treadmill where it is actually making only tiny per-capita economic progress.

Or take Egypt. Egypt's population has more than doubled in the 42 years since Nasser was born. Most of Egypt is sandy desert, and only about 5 per cent of its area can support life. If the scientists could discover an inexpensive way to take the salt out of sea water, sufficiently cheap to be economically practicable, then perhaps the desert areas could be reclaimed. Only in that way could Egypt ever feed substantially more people than it now has.

The United States now has about 175,000,000 people. The experts estimate that by the end of this century, our American population will approximately double.

Does This Spell Prosperity?

Until recently, most people have assumed that a rapidly rising population was desirable; that it was "good for business" and meant more prosperity. A rapidly rising population is good for certain types of business—for the manufacturers of baby carriages or baby foods, for example. But a rapidly rising population is certainly not beneficial in its over-all effects.

With a rapid increase in the proportion of the population that consists of infants on the one hand and aged on the other, a steadily dwindling percentage of the population constitutes the labor force to produce the goods and services necessary to supply the increased number of children and aged.

Probably the reason so few Americans are concerned with the upsurge of population, either here or in the rest of the world, is because of the fact that our population growth since America was first settled has always been rapid, but due in large part to immigration. Because it has been good for us in the past, due to our having had a rich, empty continent to open up and develop, and due to the fact that most of our immigrants were vigorous young men and women who were promptly added to our active labor force, we have erroneously assumed that population growth in general is an intrinsically good thing.

If we do not in the relatively near future slow down the rate of population growth, the world simply will not have the natural resources to maintain its population at anything like the standards of living to which the people aspire. And in the United States, as well as everywhere else, we will inevitably have to have far more governmental regimentation and control, and much less freedom of choice.

Communism's Impressive Record

Anyone who has seen the tens of thousands of people sleeping in rags on the sidewalks of Calcutta or Bombay knows what excessive population means. Unless we want to see the conditions that exist in India and Egypt spread over the rest of the world, the scientists must find some method of simple, inexpensive, and effective fertility control. The scientists, through reducing death rates, have produced this problem. We all must try to see to it that the scientists now have both the resources and the motivation to solve it. Unless population growth is halted, the underdeveloped countries will not be able under democratic political and economic methods to attain the

economic growth that their rising expectations demand. In their desperation they then will, I fear, try the communist way.

Although the Western powers hate to admit it, the communist form of society, if one ignores the human misery and loss of freedom, does have real advantages for underdeveloped states which wish to make rapid industrialization their one primary goal.

Most of Karl Marx's prophecies have proved completely wrong. Marx thought communism would destroy the free system in advanced countries. It has not. Instead, however, communism has unexpectedly turned out to be a quick method of building industry in backward or primitive areas. Russia and China are proof.

Economic development stems from capital formation, savings invested in capital goods, in machinery and equipment. Rich countries get their capital formation through voluntary savings. Poor countries cannot achieve capital formation without compulsory labor and forced savings, squeezed from people who are already living almost at a bare subsistence level.

Communism obviously has nothing to offer the United States and Western Europe. In the underdeveloped third of the world, however, the per-capita income of the people only averages somewhere between \$50 and \$60 a year. Here in the United States, out of our abundance, we save and put into capital formation about twice as many dollars per capita as the total per-capita income of the peoples in the underdeveloped areas.

The Price of Survival

The masses in Asia and Africa and Latin America have awakened to the fact that their poverty is neither a natural necessity nor something ordained by Providence. The underdeveloped countries are increasingly realizing that in 40 years under communism Russia has developed from a weak, primitive nation to the second strongest industrial power in the world, and they hear glowing reports about the current development of China. It is sad and perhaps surprising, but nevertheless true, that even the intellectuals in most of the uncommitted, underdeveloped countries appear relatively indifferent to the moral cost of economic progress under communism, to the agonies that the Chinese people are experiencing under communist dictatorship. It is foolish, however, for us to underrate communism's powerful attraction for the underdeveloped countries which put rapid industrialization highest on the list of their national goals.

To reduce the likelihood that most of Asia, Africa, and much of Latin America will slip into the communist orbit will require, I believe, massive economic aid from the United States and other Western powers. I don't know what this annual cost in terms of dollars may be. Estimates as to the American share range from two billion dollars to three or four billion dollars a year, over a long continuing period. This is, of course, an enormous sum of money, but nevertheless it would be only a fraction of 1 per cent of our gross national product, and less than the annual cost of the Marshall plan, which a decade ago saved Western Europe. And if such an expenditure significantly in-

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The Third Offensive

The contest for men's minds and hearts calls for mobilization of our finest intellectual and creative resources

THE BACCALAUREATE ADDRESS

by PIETRO BELLUSCHI

I SHALL speak to you on this day not as a Dean, but as an architect. The peculiar demands of the profession seldom allow an architect to acquire great wisdom; but from his narrow perch, if he is reasonably perceptive, if he likes people and, I may add, if he lives long enough, he may succeed in distinguishing what is important from what is trivial, and get as close as any other man to understanding the core of human motivations.

Early in his education, the architect discovers that the man-made world which surrounds him is the successive crystallization of many living forces shaped to serve people; therefore, its visible forms, good or bad, are the true symbols of a given society.

This sense of historic destiny, which like a halo sanctifies architecture, gives its practitioners a strange and often unwarranted optimism in their work and in their mission. They even come to believe at times that this is a perfectible world, worthy of one's labors, and that progress of the human race on all fronts is inevitable. I suspect this same feeling exists in all professional men who love their calling.

As I look upon your faces, knowing the sacrifices you and your parents have made to prepare yourself for a fruitful life, I am moved to a renewed sense of excitement at the recollection of my early experiences as I began my journey through life. Yet as I compare the world of my youth in the early decades of this century with the present extraordinary breakthrough in the boundaries of knowledge, with the expectant glow of space and star explorations, with the portentous challenges of the awakening millions of the earth, with the enormous problems of our own growth and mobility, I must confess that I am awed by the immensity of your expectations. Yet these expectations cannot be free from danger and fear. In fact, by their very nature and intensity, they create conflict between the people of the earth.

This conflict is expressed in many forms. *One* is naked force grown destructive beyond imagination. *Another* is economic competition to influence other nations, by raising their standard of living through trade, commerce, and point-four programs. A *third* one is a contest to win the loyalties of all people of the world to certain ideals of life and conduct. This contest is less clearly defined but in the long run could be the more decisive.



Gjon Mili Photo

Pietro Belluschi

Dean of the School of Architecture and Planning

Should it be proved that our side has kept faith to and assiduously advanced those Western ideals and values which are the heritage of a long civilization, this third offensive could gather enormous strength because its appeal is directed at the very heart of all humanity — at men's deep desire first to learn, then to understand, finally to express themselves in wisdom and awareness.

This high concern for acquiring and expressing the things of the spirit may perhaps be described by the term "culture," a somewhat discredited word, but one which, in its best meaning and in the context of our own age, could well serve as the renewed symbol of the importance of man and a measure of his worth at all levels of action. Certainly it means to cultivate lasting values; in our time particularly, it teaches how to make technology not an end in itself, but a great liberating force which if wisely applied can enhance and enrich rather than demean man's way of life.

The other day when President Eisenhower announced the building of a 100-million dollar electron-linear-accelerator, he spoke words which must have been inspired by his enlightened scientific adviser. "Our government," he said, "labors to further the free use of science for healing, for enriching life and freeing the spirit." It is true that culture may be promoted under any political system, but we like to believe that it can reach its fullest flowering only in a climate of freedom where a sense of adventure is allowed to accompany each individual creative act.

It is by probing into new fields, into new meanings by artists as well as scientists, by searching for new answers, by the willingness to try out new ways, even

at the risk of failure, that culture manifests itself. This definition of culture then is different from that held by the Victorians. It is a more dynamic one and gives greater promise, because it does not exclude the total experience of living. It may have its roots in the past, but it blossoms in the present; and in a way it makes one think of the present as the most exciting time in which to have lived.

It would be interesting to theorize on the effects the discoveries by great men of science, early in this century, had on other fields, by promoting new freedom of inquiry. Since Einstein, a contagious feeling of excitement, of adventurous participation, seems to have attached not only to all branches of science, but to the arts as well.

Visual experimentation, new explorations in the meanings of color, form, and sound, new theories of self-expression have followed in rapid succession and enlarged our understanding of the creative act. Beauty is no longer a static idea. The artist is no longer interested in describing the obvious, but is becoming the mirror of his own kind of universe, the seeker of new orders, the pure receptacle of unique visions. Vision not only pervades the creative life of the pure scientist and the artist but in a larger sense illuminates the knowledge of all cultured men.

But the attainment of *vision* presupposes an independent turn of mind. Unfortunately, our modern institutions, while making it easy for the average man to obtain knowledge, seem to be organized so that he has a much more difficult time acquiring independence of mind. People are made to move and to act in great uniform patterns; mass media of communication consecrate conformity; and everywhere men are urged to adjust and to comply, and the reasons for this in a modern society are quite compelling.

It takes determination and courage to dissent, to stand against the current, to discover oneself; but creative men are almost always nonconformists, and in this sense they are the real protagonists of any culture. It is important, however, that this seeking of uniqueness be accompanied by reasoned and enlightened self-discipline. To dissent in foolish ways, or for the sole sake of contradiction, is not what I mean. I say rather that it takes determination to learn to distinguish truth in one's own way and to establish values in the context of one's own unique potential. The acquisition of culture is indeed a difficult and aristocratic venture, but it is open to anyone with a will; it is the task and duty of a nation through its great institutions of learning to stimulate this will in its gifted young citizens.

In my Roman youth, I had more than a glimpse of the wonderful architectural fruits of past cultures; later in life, I have observed the visual chaos wrought by unassimilated industrial systems, by societies where all values had been leveled to mass acceptance. Your generation must be alert to the dangers inherent to our complex political and social organizations; it must develop the wisdom to consider culture a necessary activity in the preservation of our highest ideals, not only as a means to national self-realization, but also as a most effective weapon in the present conflict for the

power and privilege of guiding other less developed people in their years of growth. We must be able not merely to tell them but to show them by our example how their immediate material necessities need not obscure the ultimate and highest purposes of life.

You have read of the thousands of blast furnaces clumsily arising in China. I have traveled through many parts of the world in recent years, and I found it true that nationalism and industrialization have become the great motivating forces in almost all the new nations. The steel mill and the cement factory are for many Asians and Africans the sacred symbols of their free destiny. C. D. Jackson gave me the theme of this address in a story he told of an incident that happened last summer, and which was carefully kept out of the press:

Egypt opened a steel mill; this mill had little or no justification because Egypt has no coking coal, only some very, very poor iron ore up in the Aswan region which is difficult to extract, expensive to ship down to the mill, and which they hardly know what to do with. But they had to have their steel mill, and they got it. It was financed neither by the Americans nor the Russians but by the Germans. Came the great day for the inauguration of the mill. Mr. Nasser was there; the German ambassador was there; and the mill started. As the first glowing slab rolled down the rollers, the workers in the mill, moved by one of those mystical things that impel people, started a snake dance around the machinery. Gradually, they worked themselves into an absolute frenzy. One worker, really overcome, jumped up and lay down on this glowing slab. Two of his fellow workers jumped up and pulled him off. They both lost their legs. He was little more than a crisp.

Before we allow ourselves to be too smug about this story, we may well recall how many human sacrifices our own industrial society has offered before the altar of material progress. The story is really in itself a symbol, an example of misplaced human expectations, of confusing the means with the ends, of misdirecting the divine fire which is at the heart of every man.

It is only recently that we have begun to be alerted to the fact that machines were beginning to pervert our lives. The recognition of the need to protect and enhance human worth has been slow in arising. It began with demands for social reforms; it caused revolutions; it added fuel to two world wars and to the present cold war. But the emphasis of the struggle is slowly and visibly shifting. There is now a growing and as yet unfulfilled demand by men everywhere to be allowed to give play to their expressive powers. There is a swell of interest towards the arts in all its forms, which only needs to be given encouragement and guidance.

The new Lincoln Center for the Performing Arts in New York City, the proposed Cultural Center in Washington, the growing number of museums and symphony orchestras, the art and music festivals, the tumultuous reception given the Bolshoi Ballet in this country and to the Boston Symphony and our M.I.T.

(Continued on page 544)



Albrecht Dürer

The Scientist as an Artist

Science and art share the basic elements of beauty, the differences are matters largely of degree, and the far greater resemblances deserve more emphasis

by **GEORGE RUSSELL HARRISON**

THE image of the scientist held today in the minds of nonscientists is likely to be unduly conditioned by the impact of technology on modern life. Technology is easily confused with science, to which it is related in somewhat the same way that journalism is related to poetry. As a result the scientist and the artist are often considered to be almost diametrically opposed in their methods of operation, the artist basing his activities primarily on emotion tempered by reason, and the scientist his on reason not tempered by anything. Indeed, science is supposed by many to carry out its operations so implacably under the dictates of blind logic that it is likely to overreach itself, and to land us in situations which are very disturbing to the humanist.

Typical of a common misunderstanding regarding the forces that drive the scientist is a statement which Boris Pasternak has Dr. Zhivago make in his diary: "Progress in science is governed by the laws of repulsion, every step forward is made by the refutation of prevalent errors and false theories . . . Forward steps in art are governed by the laws of attraction, are the result of the imitation of and the admiration for their beloved predecessors."

I have found no scientist who agrees with this statement; all urge insistently that science progresses, not by negation of what has gone before, but by attractions and imitations similar to those which stimulate progress in art. It was Sir Isaac Newton himself who said, "If I have seen farther, it is by standing on the shoulders of giants."

The work of the true scientist is primarily directed and conditioned by aesthetic values. Advances in sci-

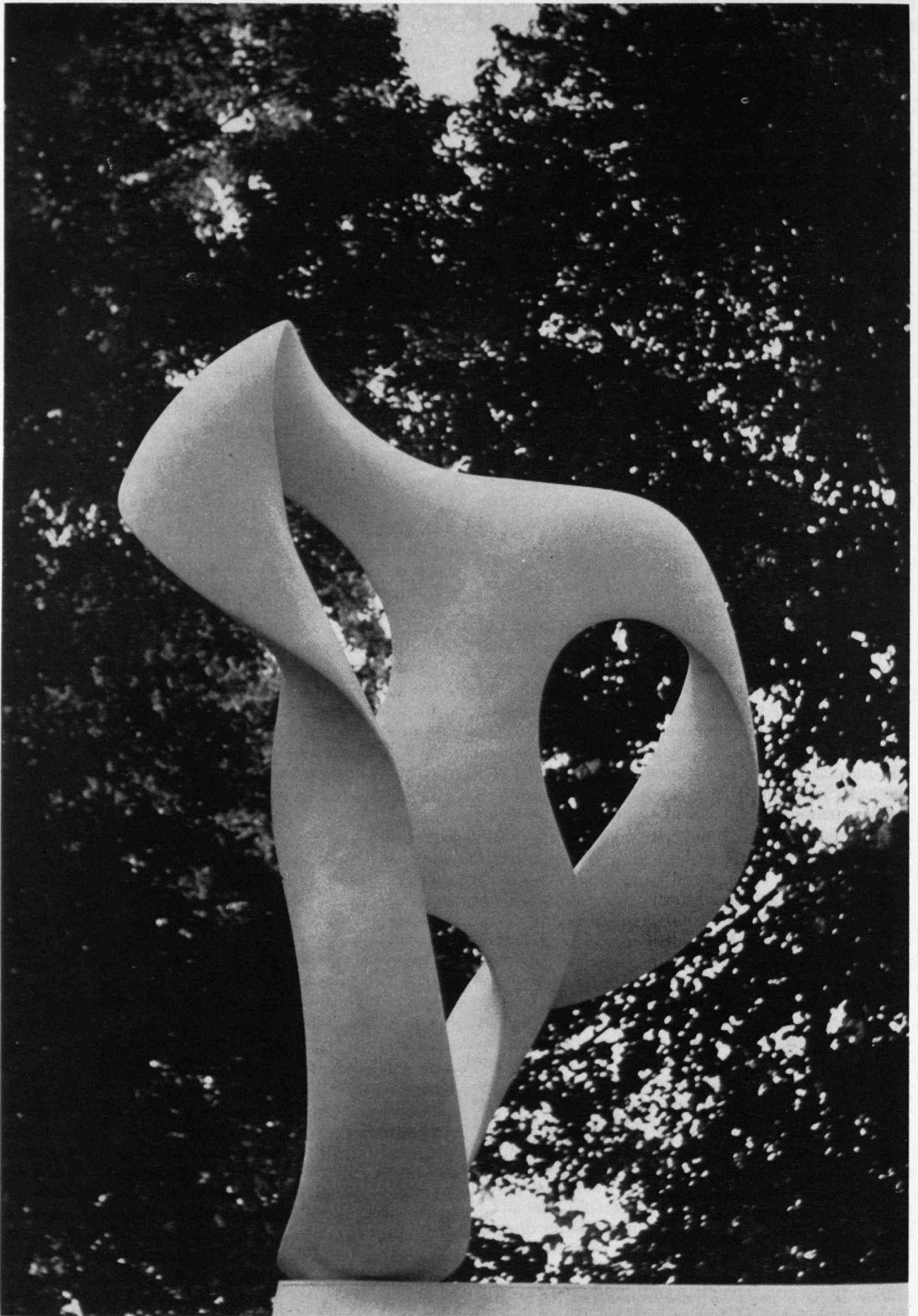
ence result, not from purely rational considerations, but from the search for beauty, the seeking out of order, harmony, symmetry, and balance. No scientist could ever, with aesthetic guides, thread his way through the impenetrable thicket of all the possible deductions that result from a purely logical approach. Inspiration comes to the mind when apparently random fancies, welling up from the unconscious, are seen to fit into previously unperceived patterns. The creative imagination that invokes and evaluates such patterns is the major tool of artist and scientist alike.

Every scientific hypothesis or discovery is a work of art. It arouses in observers feelings of beauty to the degree that it appeals as true, and feelings of interest to the degree that it is new, disciplined, and fitting. The panorama of modern science is like a vast mural painting on which thousands of artists have been filling in detail over the centuries, a hypothesis and its subsequent verification here, a discovery and its explanation there. At times it can be seen that certain areas of the mural need working over, to bring out a previously unperceived degree of order, or to smooth together sections in which overlapping detail does not match. Seldom must an area of the mural be blanked out completely. When this happens the scientist painters have many traces to guide them, and never need start again at the very beginning.

The greater a scientific hypothesis the more closely do the drives responsible for it resemble those which produce a great work of art. Einstein himself described his first tentative probings in the direction of relativity as being guided by the need for symmetry and order. He might have been describing the approach of Beethoven, or Praxiteles, or Milton, to the working out of their respective inspirations.

Like a work of art, a scientific generalization needs technical understanding for its appreciation. My

This article is based on remarks made by the eloquent Dean of the School of Science at M.I.T. during the 50th Anniversary Convention of the American Federation of Arts.



Max Bill

colleague in the School of Architecture and I stand mute before an abstractionist painting, he drinking it in, I feeling inadequate before what seem to be the scratchings of an adolescent. Later we stand together before a plaque setting forth Maxwell's equations and are mute again, but now it is my turn to be stimulated, and to have my imagination expanded. I am filled with wonder that in less space than is needed for the first two of the Ten Commandments, themselves no mean concentration of experience, is compressed the behavior of all the electric charges and magnetic fields that man has ever met, whether in the nucleus of an atom, a beam of light, an electric motor, or a cosmic ray from a distant nebula.

The same concentration of information that one finds in the picture better than 10,000 words, or the poetic turn that stimulates a hundred echoes in the mind, is found in science in such equations as Einstein's $E = mc^2$. The vast vistas of truth thus bundled in a tiny package can be bulked out in the mind of the beholder in accordance with his understanding. The very process of so bulking them out will, indeed, increase his powers of comprehension.

And as Sir Edward Appleton has said, "So far from reducing life to something cold and mechanical, modern science . . . like poetry reveals depths and mysteries beyond and quite different from the ordinary matter-of-fact world to which we are accustomed."

2

The scientist feels that he has achieved one of his goals when he has "explained" something. By this he means that he has viewed a phenomenon from all sides, and has seen that it fits comfortably into the mural that relates other "explained" phenomena. "Explanation," involving as it does the process of "laying out flat," seems to me to have been originally an artistic term. The scientist lays things out flat for the same reasons the artist does, so he can see them, perceive their relationships, and if necessary rearrange them.

It is sometimes said that our picture of the atom is growing more and more vague. This is by no means the case; the atom itself looks more blurry, to be sure, but this turns out to be the nature of atoms; the picture grows clearer and more definite. We remember more frequently than before that we are looking at pictures of atoms, not at atoms themselves. Recognizing the difference between an atom and its picture increases our ability to specify how atoms will behave in various circumstances. As we mature in aesthetic appreciation our need diminishes for pictures of atoms which resemble so closely the things that we see in the everyday world.

Like earlier men with their gods, we are able to visualize the unknown only in terms of the known. So the scientist has come to recognize that his molecules and neutrons and nuclei are artistic products of his creative imagination. They cannot look like the real thing, which is unseeable,

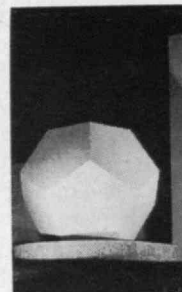
but the pictures have validity in the degree that they enable him to predict molecular or nuclear happenings correctly.

The sweeping beam that paints the picture on a television tube is a stream of electrons impinging on a fluorescent screen. These electrons have been seen by no one, but are found to behave like tiny blobs of electricity which can be weighed and measured by appropriately delicate means. So the artist-scientist paints them in these terms on the mural and sees that they are parts of atoms, emit radiation, and can be expected to perform various other electronic tricks. But the picture distorts if pushed too far, and the electron model is found unable to explain some newly observed facts. Then a quick repainting job is done; the electron in the mural is set to spinning, and is hastily dressed up with waves to guide it.

When the atom was found by Rutherford to contain electrons it was natural to think at once of the analogy with planets in the solar system. How pleasant to visualize in the microcosm a billion suns, each with planets circling about in tiny majesty! Bode had painted a detail of great beauty on the mural by showing that the distances of the nearer planets from the sun bear a simple mathematical relationship to one another, and had by this means even located a missing planet where the asteroids were later found. Kepler discovered that a planet sweeps out in its orbit equal areas in equal times, no matter whether it is falling toward the sun or climbing from it. How exciting to imagine this harmonious music of the spheres transferred to the inner reaches of the atom. What a beautiful example of order if in the microcosm one should find the same stark mathematical beauty as in the cosmos!

Looking at neighboring areas of the mural soon showed that this picture could not be exact. If it were true the atom would quickly collapse in a tiny flash of light as its electrons spiraled hurriedly into their nuclear sun. Many scientists were downcast at this failure of the universe to obey their visualizations. Then in 1913 Niels Bohr, working backward from the existence of lines in the spectrum, and using two radical new assumptions analogous to some found useful for other purposes, was able to calculate the wave lengths of the observed lines accurately to one part in a hundred thousand. He showed that what was needed to understand the atom, at least as an emitter of radiation, was to relax a bit, deliberately suppose that everyone had been misled by the paintings of the hydrogen atom in other parts of the mural, and conclude that an electron can stay put in an orbit indefinitely, radiating no light unless it jumps to another orbit.

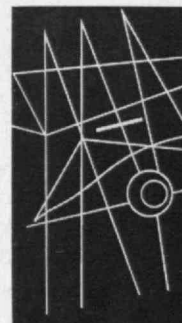
The point for us is that the new laws thus found to govern the motion of electrons in atoms, though in some ways different from those governing the planets, proved incredibly more beautiful and stimulating. And as a result, widely separated parts of the mural, previously out of kilter at the edges, could be fitted into a remarkable new unity when repainted in terms of these new assumptions.



Eduardo Torroja



Fernand Léger



Arp-Taeuber-Abramovic

Then came the great perception that the 90-odd kinds of chemical elements that exist on earth are not 90 different entities, but are merely differing assemblies of three basic particles, neutrons, protons, and electrons, in various numbers of patterns. Tin is tin and oxygen is oxygen, not because they were spilled out of different bags at the Creation, but because tin comes into being when electrons are sent circling around a nucleus having 50 positive charges, and oxygen when there are only eight.

Thus, through the work of a host of artistic scientists, the great explanation dawned of why there is a Periodic Table of the chemical elements, and why each atom has its individual properties. Soon it became possible even to achieve some mastery over the transmutation of atoms. As the world has learned to its present discomfort, but will live to learn to its great advantage, the new model of the atom works. It is a dynamic model, and will continue to grow in definiteness. From time to time new details will have to be painted in and some of the present ones will need revision. This will be because atoms will be subjected to new probings and investigations.

The aesthetic triumph of explaining all molecules as simple assemblies of atoms, and all atoms as arrangements of three basic types of particles, fills any new scientist with stirrings similar to those which overwhelm a young sculptor on first beholding the head of Nefertiti, or the Victory of Samothrace.

3

Like art, science has a periodic need to burst the bonds of the classical. To get the greatest aesthetic pleasure from contemplation of any sort of imaginative creation requires some degree of novelty. I can remember when it was exciting to a motion-picture audience just to watch the opening of a door. As Western architecture has moved from the romanesque to the gothic, to the baroque, to the modern, as painting has passed through its classical and romantic and impressionistic and abstractionist periods, so has science periodically made great shifts in emphasis.

After people had become accustomed to the fact that a two-dimensional painting could capture so much of the reality of the three-dimensional world, it was necessary to find new ways of looking at things. Gesture was added to give the illusion of movement. When Leonardo da Vinci began his work, perspective in painting was new. Much later in its turn the analytical cubist school introduced a new type of artistic assertion, which instead of requiring the observer to have a roving eye which could look at things one after another, attempted to view a scene from several aspects at once, in the hope that new aesthetic values could be captured. Each new artistic movement was built on what had been done before, and each was to some degree freed from the old limitations. So is it with the quantum theory, and relativity, and the whole of modern physics. In science as in art the old is supplemented by the new rather than supplanted by it.

Einstein did not prove that Newton's law of gravitation was wrong. He showed rather that it was limited and consisted of a special vision, strikingly broad in its day, but only a part of a much greater vista

which Einstein perceived and flashed to a startled world. Newton was one of the giants on whose shoulders Einstein stood to discover this amazing spectacle, which off on the horizon showed time and space, and again matter and energy, as to some degree one and the same. Both men, in their transports of discovery, experienced emotions vaster and deeper even than those which Keats envisaged in "stout Cortez . . . silent, upon a peak in Darien." Columbus and Magellan bow before the artist and the scientist as explorers.

The scientist is just as likely as his artist cousin to suffer from temperament, and for the same reasons. Both Newton and Einstein, in their young and more productive days, were quite as insufferable to their companions as the deaf Beethoven, found sitting at noon in a darkened room, his piano cluttered with dirty dishes, with a chamberpot beneath. Yet there he was, in Phyllis McGinley's charming phrase, "bending silence into symphonies."

The similarities between Beethoven fitting together a symphony and Einstein constructing a hypothesis are amazing. The inspiration welling from the subconscious is molded and polished, examined and adjusted, recast and refurbished, until the edifice so slowly erected bears the obvious stamp of exactness and of truth.

In the words of James B. Conant: "Scientific discovery begins, not in the findings of the laboratory, but in the glimpses of the imagination. The true scientist takes off as the true poet does, not from the notes on his desk, but from a hunch, a feel in the bones, an intimation."

4

The artist must always be willing to forsake the literal and photographic for the sake of deeper truth. This may be thought a basic prerogative of art, but the scientist too must choose among various levels of trueness as he decides which complexities of an experiment to ignore.

No one, save perhaps Balboa's descendants, worries because Keats put the wrong explorer on his peak in Darien. After all, the poet was singing about explorers in general, and Cortez scans. And if Kipling stands sometimes condemned, it is because of his outmoded preoccupation with empire, not because his geography was weak. On the road to Mandalay he picked up some of the finest local color ever shipped west of the Suez.

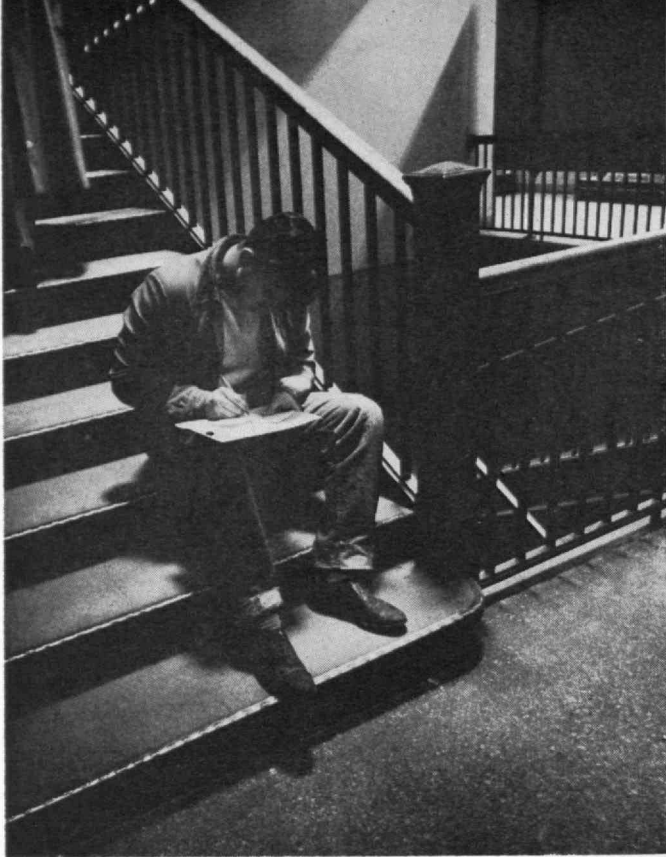
The artist must rely on many aesthetic feelings for his value judgments. His response to truth, after a certain amount of analysis, is largely instinctive and intuitive. Art is meant to be appreciated by the individual. The scientist, however, is trained to dissociate his science from his individuality. He wants to find out how the universe would behave if he and all others who probe it were removed. Heisenberg with his uncertainty principle, Bohr with his complementarity, and others, have shown that there well may exist no manner of bringing this about.

With this important conclusion Einstein felt that he must disagree. It troubled him until his death. His attitude shows that even in science each thinker, no

(Continued on page 533)

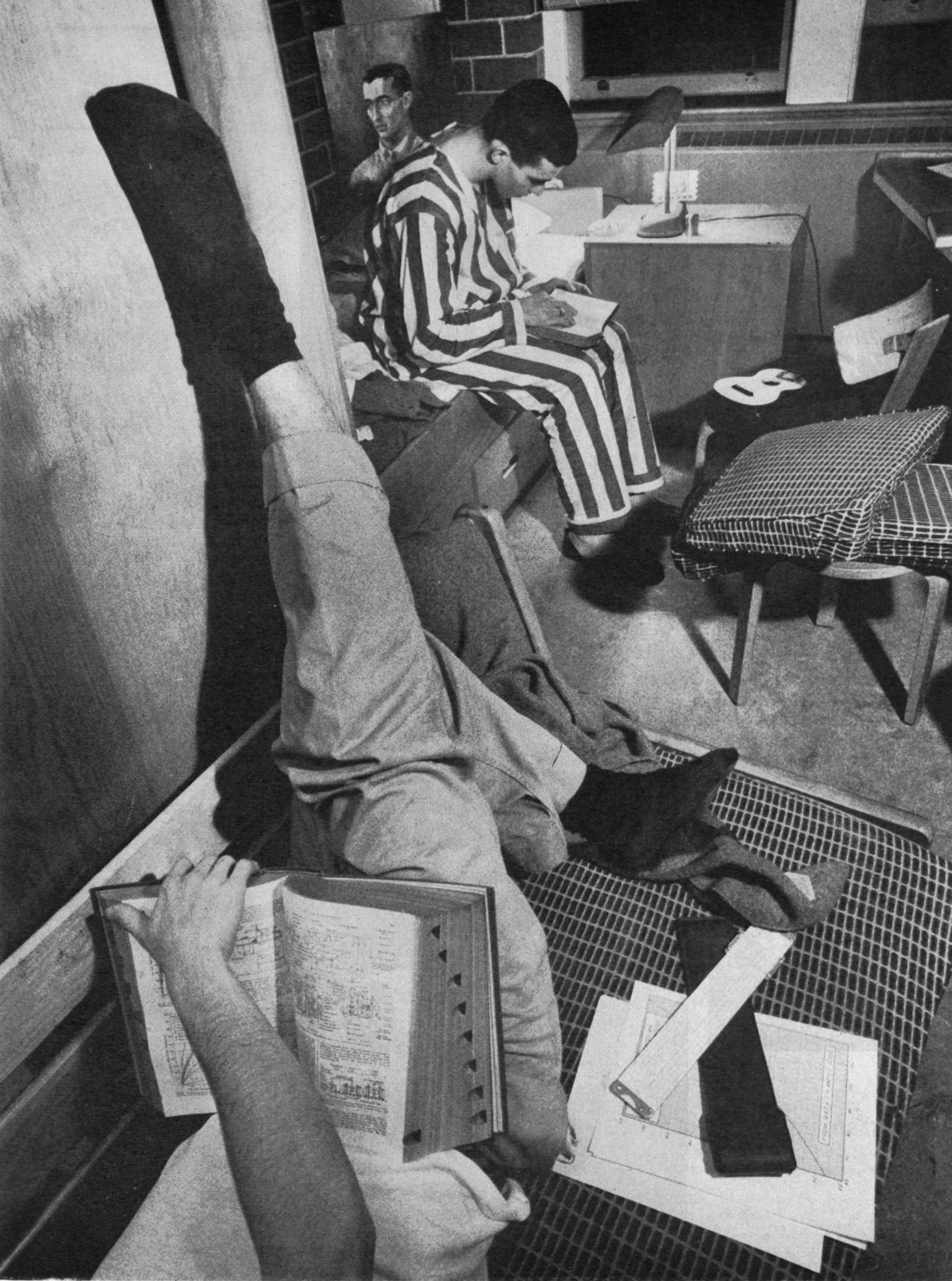


The 1950's at MIT



WILL the 1950's some day evoke as many nostalgic books, plays, and television shows as the 1920's have recently? The decade now nearly over will be remembered not only for the cold war, bomb tests, and sputniks, but also for such activities as are depicted here. These photographs show aspects of life at M.I.T. behind the façade of academic ceremonies and public affairs. They were taken by Gjon Mili, '27, a Life Magazine photographer, and show the Institute in mid-century as many men will recall it.







BUSINESS IN MOTION

To our Colleagues in American Business . . .

Recently, a manufacturer of top-flight motor cars was having trouble in producing the escutcheon for the front bumper lamps used on his newest model.

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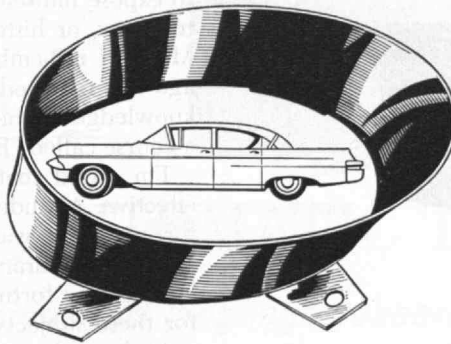
Also, after the escutcheons were polished and plated and recessed in the bumpers, the finish was found to be an excellent match. Here, again, by "fitting the metal to the job" Revere's Technical Advisory Serv-

ice was able to reduce manufacturing costs while improving the quality of the product.

It is entirely possible that by having Revere's Technical Advisory Service work with your engineers, designers, production men, purchasing agents . . . individually or collectively . . .

they can help you, too, realize substantial savings such as these.

And, because practically every industry you can name is able to cite similar instances, we suggest that no matter what your suppliers ship you, it would be a good idea to take them into your confidence and see if you cannot make a better product at lower cost by specifying exactly the right materials.



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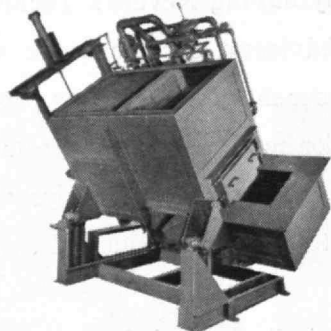
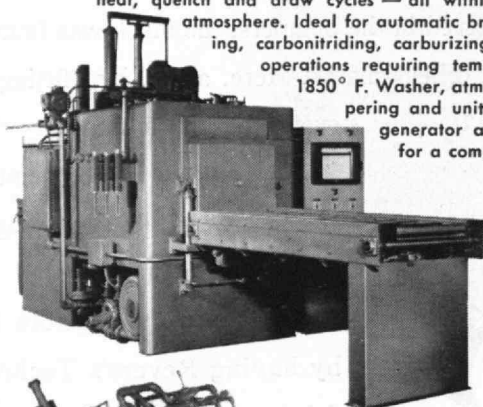
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TALK OF OUR TIMES

From Geology to the Humanities

On the sesquicentennial of Miami University, in Oxford, Ohio, David A. Shepard, '26, Executive Vice-president and director of the Standard Oil Company (New Jersey), and a life member of the M.I.T. Corporation, spoke of the dangers of specialization. "Tentatively, and in all humility," he offered some suggestions for reducing them. Mr. Shepard said in part:

■ A man may be so wrapped up in his own specialty that he becomes somewhat oblivious not only to the world about him, but to the larger implications of the very work he is doing. We can best minimize these dangers, it seems to me, by directing our young people toward a balance of interests, toward an awareness and grasp of areas of life beyond what will be their workaday concerns as adults. . . .

I recall that in my own days as a student, the attempt was made in a somewhat arbitrary manner. The liberal arts man was required to take a random course or two in science and the science student was expected to expose himself to a survey course in English literature, say, or history. Indeed, at my own alma mater, M.I.T., I remember that a budding engineer 30 years ago was required to take on both these broad areas of knowledge at one and the same time by signing up for a course called "English and History."

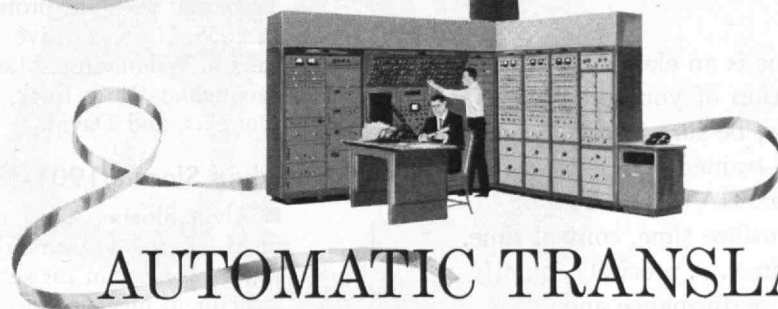
I'm afraid that this approach was not particularly effective. A student whose main interest was geology, for example, was hardly benefited by a course in Elizabethan drama or Eighteenth Century music unless he was fortunate enough to have an enthusiasm for these subjects already. . . .

It has always seemed to me in developing a broader range of interests, the best place to start is where we are — with our own individual interests, the things that come easiest and most naturally to us. A man in college who hopes to become a petroleum engineer, for example, will normally take courses in such subjects as chemistry, geology, and mathematics. Through these, perhaps, he can be led to reflect on the history of science, on the development of logic from the Greeks through the scholastics — modes of thought that prepared the way for modern science. . . .

As a part of the history of science, such a student could be encouraged to ponder the slow progress of freedom of expression. From this he might be moved to philosophic considerations of the nature of liberty and the theory and practice of democracy. Looking forward to a career in the petroleum industry, and the travel which that often entails, it might be possible to awaken his interest in the Spanish or Arabic languages, the history of the Middle East, the influence of Islam. From the hard core of his specialty, the student might be encouraged to work meaningfully out to related subjects. . . .

The day is past, if indeed it ever existed, when science and the humanities could be thought of as separate and opposed — that the one represents material considerations only, and the other spiritual.

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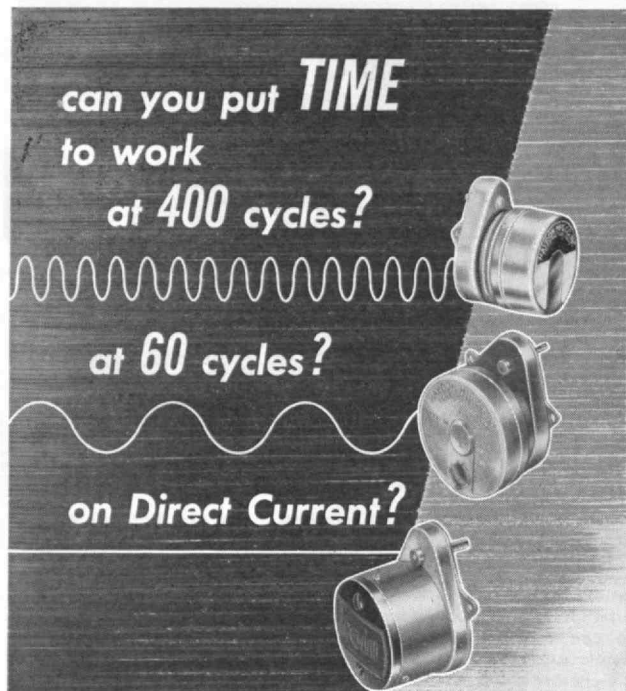
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TREND OF AFFAIRS

(Continued from page 490)

Dudley A. Buck:1927-1959

■ Dudley A. Buck, '52, one of the M.I.T. Department of Electrical Engineering's outstanding young men, died in the Winchester Hospital on May 21 after a brief illness.

The Institute of Radio Engineers gave him the Browder J. Thompson Memorial Prize in 1957 for his paper on the development of the cryotron, the first miniature electronic device making use of superconductivity at extremely low temperatures. During the last two years he carried miniaturization even further, by seeking to make cross-film cryotrons with dimensions of only a few millionths of an inch. Last year he won honorable mention in Eta Kappa Nu's selection of the Outstanding Young Electrical Engineer.

Born in San Francisco, he was graduated from the University of Washington and served two years in the United States Navy before coming to M.I.T. Here he received both his master's and doctor's degrees. He became a research assistant in 1950, an instructor in 1955, and assistant professor of electrical engineering in 1958. He was active in church and community affairs in Wilmington, Mass. He is survived by his wife, Jacqueline Wray Buck, and three children, Carolyn, Douglas, and David.

Alvin Sloane:1901-1959

■ Alvin Sloane, '35, a member of the teaching staff at M.I.T. for 30 years, died on May 25, after a brief illness. He began his service to the Institute as an instructor in mechanical engineering, became an assistant professor in 1936, and associate professor of applied mechanics in 1942. In May, 1958, he was named secretary of the Faculty.

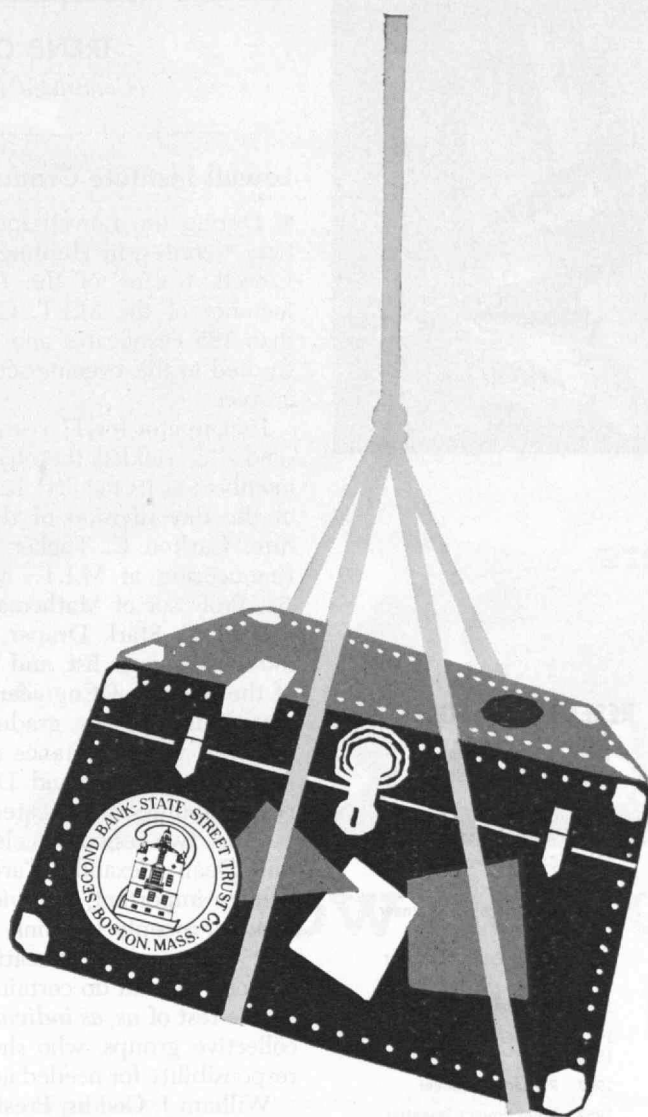
Professor Sloane was the author of several books, including *Engineering Kinematics* and *Mechanics of Materials*, and a member of the American Society for Engineering Education. He also did consulting work on graphical solutions, designer's charts, and the design of mechanisms and machines for various firms.

Born in Dorchester, Mass., he was graduated from Tufts College in 1921. His home was in Newton, Mass. He is survived by his widow, Florence Goldberg Sloane, and two sons, Arthur, of Cleveland, and Robert, of New York City.

Excellence in Teaching

■ Five Alumni received awards of \$500 each last month for "excellence in teaching," from Gordon S. Brown, '31, the newly appointed Dean of the School of Engineering at M.I.T. They were Abraham Bers, '55, Ronald J. Massa, '56, Jack L. Rosenfeld, '56, Jose M. Borrego Larralde, '57, and John P. Penhune, '57. All are in the Department of Electrical Engineering and headed for the teaching profession. Provisions for four of the awards were made in 1957 by a grant from the Television Shares Management Corporation, and a fifth award this year was arranged by Robert C. Sprague, '23, of the Sprague Electric Company.

(Continued on page 514)



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Name	Degree & Course	Year	Position
Robert P. Bartlett	SB, VI	1955	Staff Engineer
Wallace P. Boquist	SB, IX-A	1954	Staff Physicist
Roland J. Boucher	SM, XVI	1939	Senior Meteorologist
Claude W. Brenner	SB, XVI	1947	Chief Project Engineer
	SM, XVI	1948	
William B. Bryant	SB, XVI	1943	Senior Project Engineer
	ScD, XVI	1955	
Carolus M. Cobb	SB, V	1944	Senior Project Chemist
	PhD, V	1951	
Robert C. Copeland	SM, XIX	1957	Research Meteorologist
Daniel J. Fink	SB, XVI	1948	Chief Engineer
	SM, XVI	1949	
Gilbert Fryklund	SB, XVI	1957	Research Engineer
Arnold H. Glaser	ScD, XIX	1952	Chief Project Scientist
William D. Green, Jr.	SB, II	1943	Chief Project Engineer
	SM	1949	
David C. Knodel	SB, XVI	1947	Chief Project Engineer
	SM, XVI	1951	
Phillip Koch	SB, VIII	1956	Research Physicist
Lawrence Levy	SM, XVI	1948	President
Robert Linde	SB, VI	1957	Research Engineer
Philip Marshall	SM, II	1955	Staff Engineer
James J. McInnis	SB, VI	1959	Research Engineer
Roger W. Milligan	SB, XVI	1950	Staff Engineer
Arthur S. Obermayer	PhD, V	1956	Senior Project Scientist
Arthur C. S. Roberts	SB, XVI	1947	Senior Engineer
Leopold J. Rossbach	SB, SM, VI-A	1950	Senior Engineer
John Rossettos	SB, XVI	1955	Research Engineer
	SM, XVI	1956	
Melvin Rubin	SM, I	1951	Senior Engineer
Richard Rubino	SB, XIV	1952	Personnel Manager
Calvin Y. Sing	SM, XVI	1954	Senior Engineer
Robert B. Smith	SB, IX-A	1944	Research Meteorologist
	SM, XIX	1951	
Thomas B. Smith	SB, VI	1955	Senior Engineer
Joseph W. Stevens	SB, XVI	1953	Staff Engineer
	SM, XVI	1959	
John Stewart	SB, XVI	1953	Staff Engineer
Robert A. Summers	SM, XVI	1946	Chief Project Engineer
	ScD, XVI	1954	
Raymond Wexler	SM, XVI	1939	Senior Meteorologist
Ann C. Wilfert	SB, VIII	1953	Staff Physicist
	SB, III	1958	

TREND OF AFFAIRS

(Continued from page 512)

Lowell Institute Graduates

■ During the Lowell Institute School's 55th graduation exercises, in Huntington Hall on May 21, Ralph Lowell, trustee of the Lowell Institute and a life member of the M.I.T. Corporation, presented more than 125 certificates and diplomas to men who have studied in this evening school conducted under M.I.T. auspices.

Its Director for 17 years, Professor Arthur L. Townsend, '13, yielded the chair on this occasion to three members of its faculty: Ralph G. Adams, '11, Director of the day division of the Franklin Technical Institute; Carlton E. Tucker, '18, Professor of Electrical Engineering at M.I.T.; and Raymond D. Douglass, '31, Professor of Mathematics at M.I.T.

Both C. Stark Draper, '26, whose titles truly are too numerous to list, and William T. Alexander, Dean of the School of Engineering at Northeastern University, addressed the graduates. Professor Draper emphasized the importance of practical as well as theoretical knowledge, and Dean Alexander stressed the responsibilities of educated citizens.

"The two essential elements of professionalism," said Dean Alexander, "are technical proficiency and, equally important, a service motive. It is all too common for people to think in collective terms and say that 'business,' or 'education,' or 'the government,' or 'the city' should do certain things. It is you and I, and all the rest of us, *as individuals*, working through these collective groups, who should take the initiative and responsibility for needed action."

William J. Geddis, President of the Lowell Institute School's Alumni Association, urged the graduates to join this organization, and presented the Charles Francis Park silver medal to the outstanding student, Daniel D. Murphy, a member of the staff of the Electronics Corporation of America.

Earlier, Mr. Lowell was host to the faculty of the school and some of its friends at a dinner in the M.I.T. Faculty Club.

A Psychiatrist from Wellesley

■ Dr. Benson R. Snyder will join the M.I.T. Medical Department this summer as psychiatrist-in-chief. Now 36, Dr. Snyder has an impressive record: After studying at Bard College, Columbia University, and the University of Pennsylvania, he received his M.D. from New York University, interned at University of Chicago clinics, and was an assistant resident in psychiatry at Cincinnati General Hospital. He is now on the staff of Beth Israel Hospital and maintains an office in Boston.

During the Korean War, Dr. Snyder was a captain in the U.S. Air Force, stationed at Westover Air Force Base as chief psychiatrist. Since 1953, he has been an assistant psychiatrist at Harvard and in charge of the psychiatric program at Wellesley College.

(Continued on page 516)



ICBM's

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One of many challenging programs under investigation at Allied Research, an organization that daily is confronted with problems on the frontiers of knowledge. ■ Significant of this company's standing in the ICBM field, just one of its many areas of interest, is its recent selection to participate in the nation's new and vital GLIPAR program (Guide Line Identification Program for Anti-Missile Research) for the development of new concepts in anti-ICBM devices. ■ Because of the broad interests and capabilities of this organization, equally vital pioneering work is now being conducted in mass sorting of similarly colored materials . . . radiation monitoring methods and equipment . . . physiological measurement of blood pressure in an accelerated environment . . . airline operations analysis . . . vibration isolation of missile guidance and control systems . . . nuclear weapons effects on aircraft and crews . . . weapon systems analysis . . . radar and satellite meteorology . . . to mention a few diversified projects. ■ This challenging work is performed by scientists and engineers who have at their disposal completely equipped laboratory, testing and production facilities. ■ The rapid advancement of technology in all the fields of science and engineering has opened the door to unlimited opportunities. ■ If you are dedicated to working on the frontiers of knowledge in a thoroughly professional atmosphere, with excellent salaries and benefits, and with the promise of a future limited only by your imagination and effort . . . consider the opportunities at Allied Research, where . . .

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TREND OF AFFAIRS

(Continued from page 514)

Reports to the Alumni Council

■ At its final meeting this spring, in the Faculty Club on May 25, the M.I.T. Alumni Council heard many figures—regarding the Alumni Association, the Alumni Fund, tuition and loans to students, and the education of earth scientists. The principal speaker, Robert R. Shrock, Professor of Geology and Head of the Department of Geology and Geophysics, dealt with the supply of earth scientists and the plans of the new Center for Earth Sciences at the Institute.

The gift from Cecil H. Green, '23, and Mrs. Green of Dallas, announced earlier this spring, will be used for a new building on the campus for this center. Research and instruction in such fields as geophysics, geochemistry, meteorology, and oceanography will be integrated and unified here, and Professor Shrock hopes 50 per cent more students who are well grounded in mathematics, physics, and chemistry will become interested in advanced work that will increase men's knowledge of their physical environment of land, sea, and air.

Thomas P. Pitre, Associate Dean of Students and Director of Student Aid, spoke briefly on the tuition increases effective in 1960 and the credit plan to be started this fall. This credit will be available to all United States citizens in good standing at the Institute,

and will permit payment of part of the tuition at six-month intervals over a 10-year period. The Technology Loan Fund, M.I.T. scholarships, and employment opportunities also will be explained.

Edwin D. Ryer, '20, chairman of the Alumni Fund Board, reported that this was the best year the Fund ever has had. An amendment to the Alumni Association bylaws which will add a member to the Board and provide for greater rotation of its membership was explained and will be acted on this fall.

The Alumni Association's Executive Committee, on the recommendation of the Audit and Budget Committee, has approved a budget of \$109,876 for the fiscal year 1959-1960. Operating disbursements this year will be less than provided for in the budget, and the remainder will be returned to the Alumni Fund.

A third Alumni Officers' Conference, for Class and Club Officers, Educational Counselors, Alumni Fund Class Agents, Special Gifts Chairmen, and Regional Solicitation Chairmen, will be held in Cambridge next September 11 and 12, and be followed by a similar meeting in Chicago on October 3 for alumni officers in the Midwest.

Andrew D. Fuller, '95, read resolutions occasioned by the death of George Owen, '94; Samuel C. Prescott, '94, proposed Mrs. Julius A. Stratton for honorary membership in the Alumni Association; and William L. Taggart, Jr., '27, announced plans for the inauguration of President Stratton on Alumni Day. John J. Wilson, '29, President of the Association, presided, and 146 members and guests attended this meeting.

(Continued on page 518)



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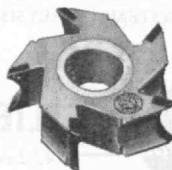
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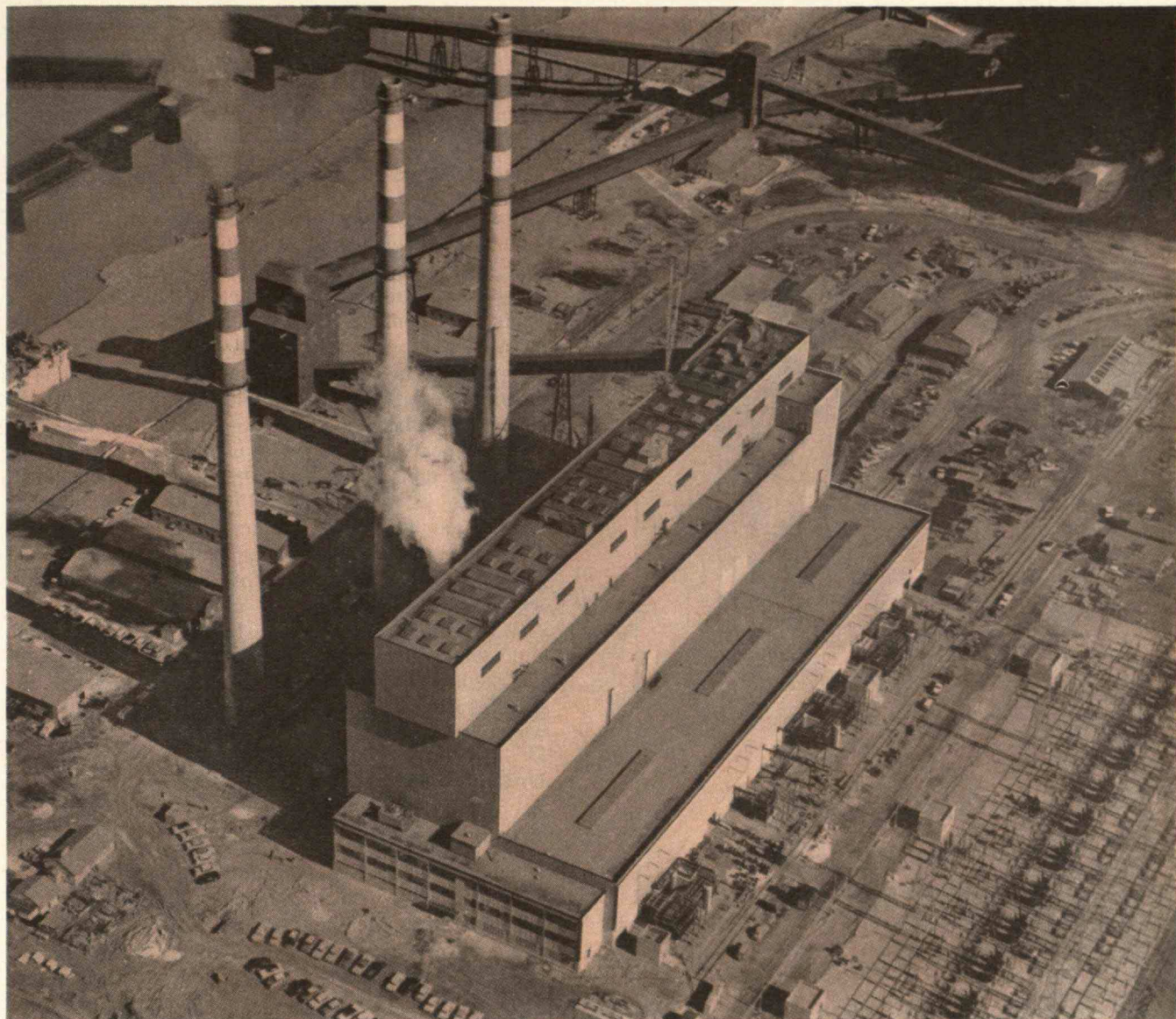


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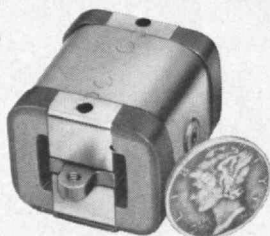
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TREND OF AFFAIRS

(Continued from page 516)

New Awards for Students

■ Two new awards were made at the M.I.T. Awards Convocation this spring: the Robert T. Haslam Cup, which went to Harold E. Gilliland, '59, for showing outstanding promise in chemical engineering; and a \$250 prize donated by the Blonder-Tongue Research Laboratories, which went to Roger G. Mark, '60, for the potential he had demonstrated in electronics.

An Awards Convocation has been held annually since 1953, when the Boston Stein Club provided for prizes in honor of Karl Taylor Compton. These awards went this time to William D. Putt, '59, Gustave M. Solomons, Jr., '60, Charles O. Staples, '59, Gerard J. Stephenson, Jr., '59, the Alpha Chi chapter of Alpha Phi Omega, and the International Program and Public Relations Committees of the Institute Committee.

Many other honors were bestowed at the same time. One provided by the American Society of Swedish Engineers went to John W. Poduska, '59, and the Clifford Award for the outstanding athlete of the year was won by Paul H. Ekberg, '59.

Undergraduate Honors

■ Winners of undergraduate honors listed in the 1959 commencement program and not reported elsewhere in The Review this month were:

Ingar F. Andersen, the Silent Hoist and Crane Company materials handling award; *Philip J. Hauptman*, *Richard W. Becker*, and *Robert E. Hillman*, the Samuel W. Stratton debating prizes; *Milton L. Lavin* and *Paul G. Savage*, the James Means memorial award to seniors showing highest professional promise in aeronautical engineering; *Kent Kresa*, the Henry Webb Salisbury memorial award for outstanding work in aeronautical engineering; *John H. Beynon*, *Douglas G. MacDuff*, and *Franklyn Williams*, the architectural prizes; *John L. Cutcliffe*, the Ross F. Tucker and Walter C. Voss award for outstanding promise in building engineering and construction; *Adrian R. Reti*, the Roger Defriez Hunneman prize for originality in chemical engineering; and *William V. Duggan*, the American Bureau of Shipping prize for scholarship.

(Continued on page 520)



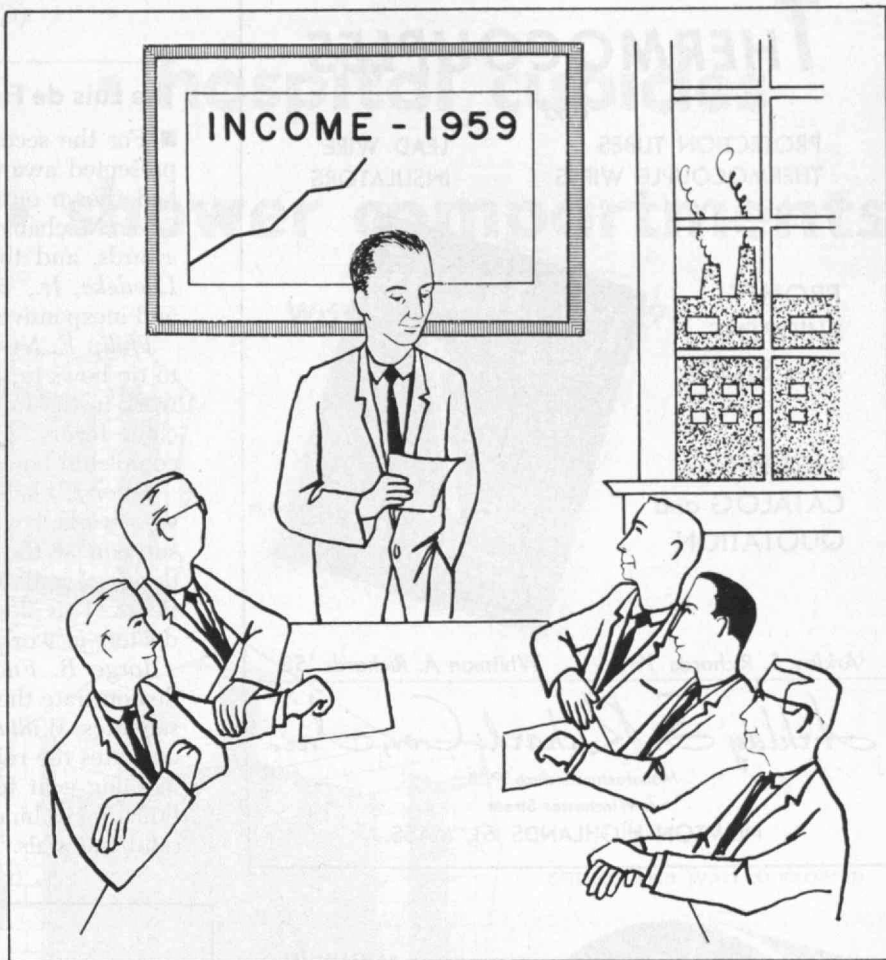
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R. H. ROBINS '50

F. J. BUMPUS '51

J. L. GANGER '51

THERMOCOUPLES

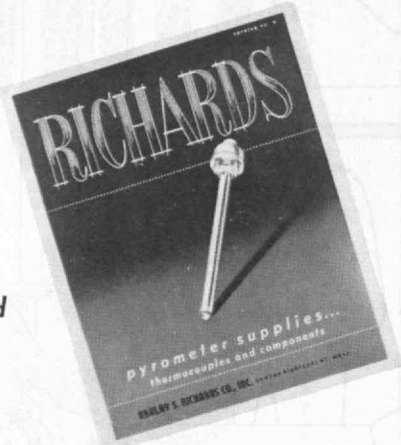
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TREND OF AFFAIRS

(Continued from page 518)

The Luis de Florez Awards


■ For the second time, Admiral Luis de Florez, '11, presented awards this spring to M.I.T. students who had shown outstanding ingenuity in design projects. Seven Mechanical Engineering students received these awards, and the top prize of \$500 went to *George Luedeke, Jr.*, '59, for designing a compact, portable, and inexpensive microfilm reader. The others were:

Philip E. Nimmo, 3d, '59, who designed a machine to tie bows in ribbons as fast as five men can do such work in the factory where his father works. The machine forms 18 loops at once, then staples and ejects completed bows.

Peter J. Luchini, Jr., '59, and *Laird E. Johnston*, '59, who worked with Dr. Thomas DeLorme, orthopedic surgeon at the Massachusetts General Hospital, and designed and built a device for fitting braces on patients. This flexible, fitting brace will be helpful to doctors in work now done by trial and error.

Jorge R. Fuchs, '61, who designed a machine to demonstrate the laws of planetary motion that govern satellites; *William R. Ferrell*, '60, whose machine demonstrates the relation between curves such as those in meshing gear teeth, and *Raymond H. Laub*, '60, who built a machine that demonstrates wave motions in solid materials.

(Continued on page 522)



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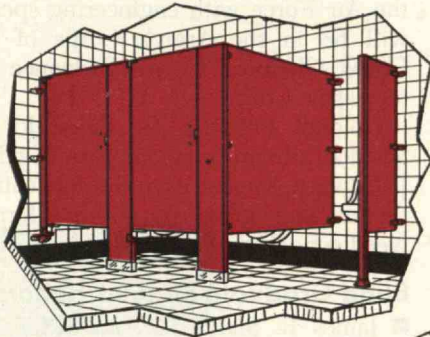
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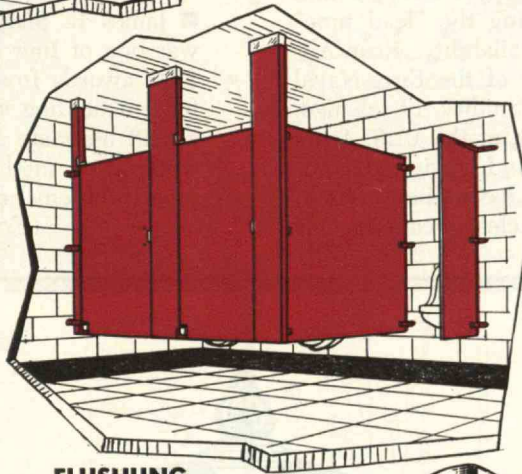
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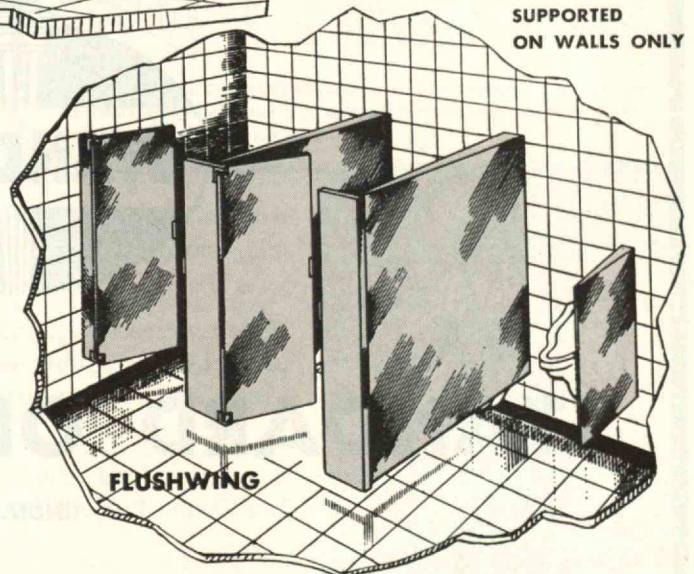
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JULY, 1959

TREND OF AFFAIRS

(Continued from page 520)

Scientists and Soldiers

■ At the R.O.T.C. Commissioning Exercises in Kresge Auditorium on June 11, Major General James McCormack, '37, stressed the special responsibilities of those scientists and engineers who take up the profession of arms. Their recommendations affect public policies, he pointed out, and the need for communication both between professions and with the public is great, but there are differences as well as similarities in the thinking and goals of the scientist and the soldier. The scientist, he explained, is inherently a nonconformist, who measures his achievements by the changes he brings about, whereas the soldier's role is that of a preserver of the *status quo*. General McCormack then introduced spokesmen for the armed services.

Major General Kenneth P. Bergquist, Commander of the Air Defense Systems Integration Division at the L. G. Hanscom Field, predicted that the decisive weapons of the future will be aero-space weapons and stressed the importance of reducing the "lead time" between their conception and availability. Rear Admiral Carl F. Espe, Commandant of the First Naval District, also emphasized the rapidity of change. Brigadier General Alden K. Sibley, of the U. S. Army Engineer Division in New England, reviewed communism's territorial gains and the basic discoveries in physics which preceded thermonuclear weapons. Our

record as gadgeteers is more impressive than in pure science, he concluded, and we must think hard to survive in a nuclear age.

Sixty-nine members of the M.I.T. Class of 1959 received commissions in the U.S. Army and Air Force Reserve at this ceremony, and 32 others were cited to receive commissions upon completion of military or academic requirements this summer. One of several distinguished military graduates, Kenneth I. Kawano, is accepting a Regular Army commission; another, Richard J. Talbot, has been selected for appointment in the Regular Air Force. Two of the men will enter pilot training on call to active duty. Others will enter the Air Force with engineering specialties, and many will be in the Army's Corps of Engineers, Signal Corps, Chemical Corps, Ordnance Corps, and Quartermaster Corps.

Colonel Frederic H. Fairchild, Professor of Air Science, administered the oath of office. The Reverend J. Edward Nugent gave the invocation, and the benediction was given by Rabbi Herman Pollack. The Needham High School Band provided music.

Blind Graduate Student Honored

■ James R. Slagle, '57, an M.I.T. graduate student, was one of four blind college students who received \$500 awards from President Eisenhower this spring for outstanding scholastic achievement. Mr. Slagle is a staff associate at Lincoln Laboratory and has been working on methods of programming a computer to solve problems in calculus.

(Concluded on page 524)



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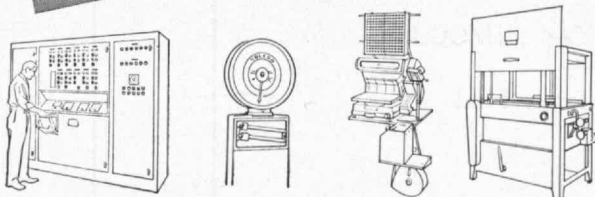


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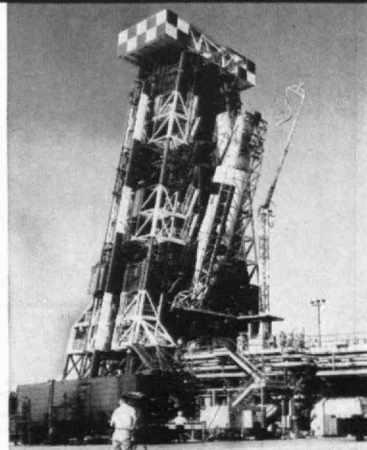


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TREND OF AFFAIRS

(Concluded from page 522)

The Engineering Teacher's Problem

■ Harold L. Hazen, '24, Dean of the Graduate School at M.I.T., told the professors attending this summer's meeting of the American Society for Engineering Education that their lives must be increasingly like those of students, because engineering has become so dynamic that in a new sense learning itself must be continuous and dynamic throughout an engineer's life.

"We must accept as an obvious working assumption," Dean Hazen explained, "that our student today will have to learn at least one and probably several new fields during his professional life. Many of these will be fields about which we know nothing today, or which are at best in their embryonic stages, obscurely tucked away in a research laboratory where no one has as yet visualized their impact on the world of affairs a decade hence."

This means, he continued, that teachers must emphasize that "learning of fundamental science and its application is less an end in itself than an example, a trial run, an exercise in the learning process, which must be an integral part of active professional life in the future." To do this well, the teachers must "repeatedly experience the learning process."

"One way of achieving this continuing growth is through personal contributions to new knowledge—

research," he observed. "Unquestionably, faculty members will also have to participate much more extensively in various types of formally organized study. Intensive summer programs will play an increasingly important role. Personal study must occupy more of the professor's time."

"All of this, in turn, places heavier and heavier demands upon the intellectual qualities and attainments of our future engineering faculties."

Dean Hazen spoke at the opening session of the engineering educators' convention on the campuses of the University of Pittsburgh and Carnegie Institute of Technology.

The M.I.T. Photographers

■ Two of the Institute's busiest men on commencement weekend were John Ralph Jackman and Robert C. Lyon of the Photographic Service Office, who took many of the photographs in this and other issues of The Review this year.

Both are from Maine, and both gave up businesses of their own to work for M.I.T. Mr. Jackman has been on the staff since 1936, Mr. Lyon since 1957.

Much of their work is done in laboratories, making photographic records of experimental set-ups for technical reports. The toughest assignment of this kind that they can recall was to photograph in action the centrifuge used by the Instrumentation Laboratory to test inertial guidance equipment for space vehicles. Their toughest assignment for The Review this year—made so by the weather—was to photograph the inauguration of President Stratton.

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GREETINGS TO PRESIDENT STRATTON

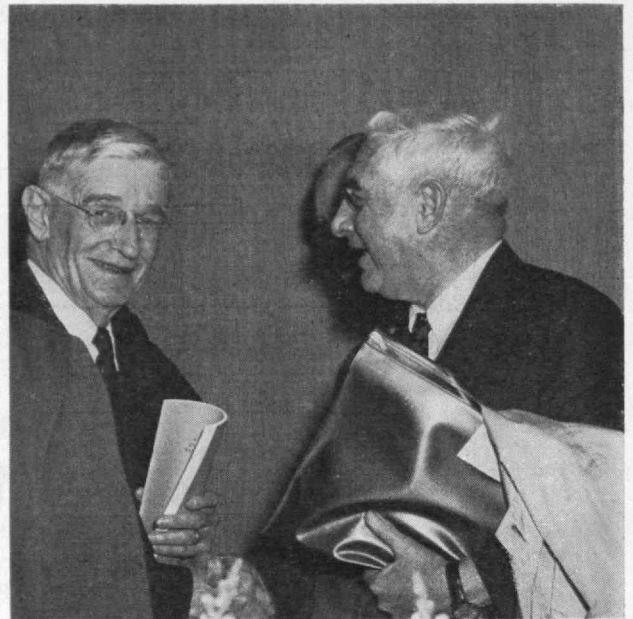
(Continued from page 484)

organization, to lift from his shoulders a thousand burdens, without losing the spirit of his guidance. It also calls for smooth functioning of the body which carries the ultimate responsibility to which he reports, the Corporation. With Jay Stratton leading us, with the support of every member of his team, and with Jim Killian at last coming back into our midst as full-time Chairman of the Corporation, we can look forward to a future in which organization is sound and complete.

"I can testify from personal experience, having just been promoted up and out, that we most certainly will need a full-time Chairman and a vigorous one, as well as a President who is a scholar, a gentleman, and an effective administrator. God bless you both. In your competent hands, M.I.T. will now proceed to still greater heights of service and distinction."

From the University of Washington

President Charles E. Odegaard of the University of Washington, where Dr. Stratton began his college work, then described the new President's native land. "Dr. Stratton," he said, "was born in Seattle and raised on the western shore of Lake Washington, where one looks eastward to the wooded shores on the eastern side, the forested hills beyond, the snow-capped peaks of the Cascades marching southward, until they bring the eyes to rest on the awesome majesty



Dean E. P. Brooks, '17, chairman of the arrangements committee, was overtaken by the photographers while talking to Vannevar Bush, '16 (left), on the afternoon of inauguration day at the Institute.

of The Mountain — to those of you who have not seen it, Mount Rainier. Not so long ago this area was covered with a virgin forest, and Dr. Stratton remembers when the far shore of the lake was not part of suburban Seattle, as it is today, but woods and forests.

(Continued on page 528)

WHAT'S IN A NAME?



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Colin A. Roberts	'46



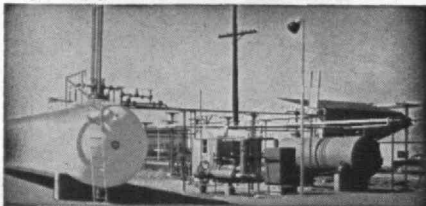
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GREETINGS TO PRESIDENT STRATTON

(Continued from page 526)

A few days ago indeed, I met a retired member of the University staff who told me how he had hunted deer on the wooded slopes of Lake Washington several miles north of Dr. Stratton's boyhood home, in an area which since 1895 has included the campus of the University of Washington. The old gentleman was only a sprightly 94.

"It is this same area which has thundered back from its hillsides the roar of the jet age as scientists and engineers have maneuvered us into the era by which a commercial-type airliner, two weeks ago, brought Rome within 11 hours of Seattle and London only nine and one-half hours away. Indeed this area of the Pacific Northwest, which may seem remote to those who have not been privileged to enjoy it, proved to be only 30 minutes away from London for those who made the flight, thanks to our human custom of shifting the clock to accommodate the sun.

"Only a spirit of inventiveness and enterprise and the commitment to energy and action could bring a primeval past so rapidly into the frontier of the space age. Something of this inheritance from the Northwest must have come with Dr. Stratton when, on completion of his schooling in Seattle and the first year of college work at the University of Washington, he headed for further training east to M.I.T. and then to Zurich. It finds expression in his creative contribution subsequently to science and the nation on this campus. It will surely assert itself in the years which still lie ahead."

From Switzerland

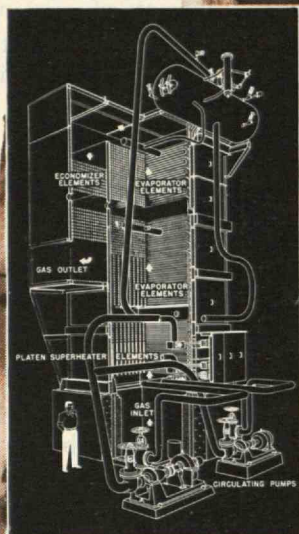
More about Dr. Stratton's education was reported by Claude Seippel, Vice-president of the Board of the Swiss Federal Institute of Technology at Zurich, who recalled that:

"Julius Adams Stratton decided in 1926 to go abroad to extend his studies. That he selected Zurich is today a subject of great pride to our school. His teachers were the mathematician Weyl, the physicists Debye and Scherrer. The 10th of November, 1927, J. A. Stratton handed in his thesis. It was written in good German. His subject dealt with the very early application of the newly discovered wave mechanics to explain the scattering of x-rays by hydrogen.

"Dr. Stratton was described to me by people who knew him in Zurich as a man of outstanding charm. I have had ample opportunity to see these last three days how true they spoke. Besides studying he got acquainted with our mountains; he climbed them on skis in the company of Professor Scherrer. This, in our view, makes him a complete man and adds, of course, to the sympathy and prestige he will enjoy in Switzerland.

"The tradition of young scientists to travel and offer their services to foreign countries is a bright spot in today's political situation. I believe that M.I.T. as well as the Swiss Federal Institute, though being essentially national in their character, reserve a door wide open to international exchange. About 11 per

(Concluded on page 530)



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GREETINGS TO PRESIDENT STRATTON

(Concluded from page 528)

cent of the students at M.I.T., even more in Zurich, are foreigners and I must say that if Zurich had limited the choice of its teachers to Swiss alone, it would have been deprived of many great names — Weyl and Debye, for instance. It is gratifying that Dr. Stratton is giving support to this openness to international exchange by his personal example."

From Harvard

President Nathan M. Pusey of Harvard University was the final speaker. He foresaw a continuance of the "University of Cambridge" in the cordial collaboration between M.I.T. and Harvard which has been achieved by an intellectual federation. "We rejoice with you," he declared, "that you have chosen Dr. Stratton as your leader."

From the auditorium, the guests then proceeded to Rockwell Cage where 2,300 were served lunch. The unpleasant weather, which began before and lasted long after the inauguration, had failed really to put a damper on the enthusiasm and excitement of the Institute's family.

Representatives of the Corporation

■ Members of the M.I.T. Corporation present for the inauguration of President Stratton were:

- | | |
|----------------------------|------------------------------|
| Dwight C. Arnold, '27 | Walter Humphreys, '97 |
| James M. Barker, '07 | B. Edwin Hutchinson, '09 |
| James P. Baxter, '3d | Owen B. Kiernan |
| Walter J. Beadle, '17 | James R. Killian, Jr., '26 |
| Horatio L. Bond, '23 | Augustus B. Kinzel, '21 |
| Lloyd D. Brace | Ralph Lowell |
| Thomas D'A. Brophy, '16 | James McCormack, '37 |
| Vannevar Bush, '16 | Theodore T. Miller, '22 |
| Thomas D. Cabot | H. B. Richmond, '14 |
| Donald F. Carpenter, '22 | Gilbert M. Roddy, '31 |
| Charles A. Chayne, '19 | David A. Shepard, '26 |
| Francis J. Chesterman, '05 | William J. Sherry, '21 |
| Marshall B. Dalton, '15 | Alfred P. Sloan, Jr., '95 |
| Thomas C. Desmond, '09 | Joseph J. Snyder, '44 |
| Bradley Dewey, '09 | Robert C. Sprague, '23 |
| Ray P. Dinsmore, '14 | William L. Stewart, Jr., '23 |
| Hugh S. Ferguson, '23 | John J. Wilson, '29 |
| Edward J. Hanley, '24 | Robert E. Wilson, '16 |
| Robert T. Haslam, '11 | Clarence L. A. Wynd, '27 |

The Inauguration Committee

■ E. P. Brooks, '17, Dean of the School of Industrial Management, was chairman of the committee on arrangements for the inauguration of President Stratton. Its members were Albert Bush-Brown, Robert M. Kimball, '33, Gilbert M. Roddy, '31, Donald P. Severance, '38, Gerard J. Stephenson, Jr., '59, Philip A. Stoddard, '40, William L. Taggart, Jr., '27, and B. Alden Thresher, '20.

Assisting this committee were John Ayer, John E. Burchard, '23, Harvey Burstein, William H. Carlisle, Jr., '28, Frank H. Conant, Miles P. Cowen, D. Hugh Darden, James G. Kelso, Klaus Liepmann, John I. Mat-till, Walter L. Milne, James Murphy, John W. Sheetz, '3d, '42, Donald Whiston, '32, and Francis E. Wylie.

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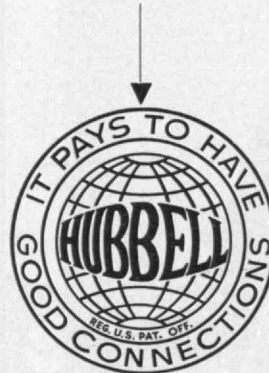
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THE SCIENTIST AS AN ARTIST

(Continued from page 504)

matter how great, is finally led by aesthetic considerations. After almost a score of years of argument with Bohr, Einstein said of Bohr's position: "To believe this is logically possible without contradiction, but it is so very contradictory to my scientific instinct that I cannot forego the search for a more complete conception." Though the greatest scientist of many a century is speaking, surely this is an artist.

This "conference at the summit" (for Bohr inherited Einstein's mantle of "greatest living scientist") was a very gentle series of discussions. The humor, the courtesy, and the mutual esteem of the two participants kept it far from the realm of controversy. Whenever the pair could get together they discussed complementarity and causality and the effect of an observer on what he was trying to see in the world of atoms. The tiniest particles cannot be expected to remain uninfluenced by the light waves used to observe them; who then can say how they behave when unobserved? Thus, said Bohr with Heisenberg, some of our "common sense" conclusions about individual atomic occurrences are surely erroneous.

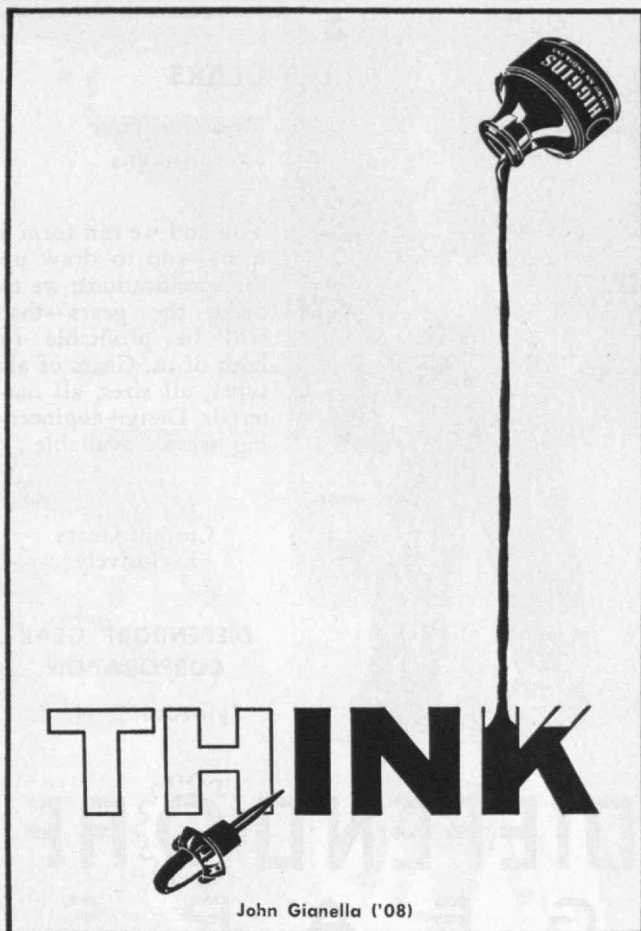
Einstein, while agreeing with Bohr as to logic, could not bring himself to this point of view, and tried endlessly for some way around the difficulty. He would suggest a "think" experiment, a mental exercise on the logic of which both men would agree, which seemed to contradict Bohr's argument. Bohr would retire, a bit puzzled, but the next day would emerge with an explanation of why complementarity was not violated after all. Einstein would be convinced by the specific argument but would remain dissatisfied, and would emerge in his turn with a different example. This, too, Bohr would after some thought demolish. Always the two would agree on the logical analysis, but still Einstein remained unsatisfied.

Probably most physicists feel that Bohr had the stronger position, and that Einstein was guilty of wishful thinking. There are some who say, however, that the peculiarities of the quantum theory may themselves well spring from the position of man as an observer rather than being intrinsic in the natural world. Thus, while Bohr is correct in his own context, Einstein may in the long run prove the more farseeing of the two. What concerns us here is not the merits of the argument, but the fact that Einstein, led to water by logic, could not be satisfied because of the depth of his intuitional thirst.

"Art," says André Malraux, "is an age-old struggle to remold the scheme of things." This statement can be paraphrased to fit both science and technology, and to differentiate them. Technology remolds the things themselves; science remolds the scheme.

Much aesthetic satisfaction comes to the scientist from his occasional ability to use his concepts for predicting. Darwin found, in Madagascar, a very unusual orchid, with throat so deep that it could not possibly be pollinated by any insect known. The great evolutionist promptly predicted that a capable moth would be found, for otherwise this race of orchids would long since have been lost. Sure enough, the moth

(Concluded on page 534)




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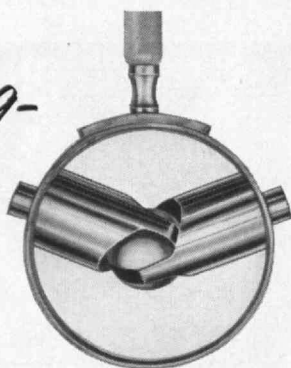
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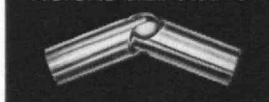
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THE SCIENTIST AS AN ARTIST

(Concluded from page 533)

eventually appeared, its foot-long nectar-sipping tube coiled in a delicate spiral for portability.

Knowing how much of the great beauty of mathematics arises from hard unyielding logic, the scientist is helped to understand the need for classical disciplines in art. Why should there be four movements in a symphony? There need not be, of course, but the aesthetic appeal of art is heightened by discipline; the facile fails to rouse our interest. Our pleasure in rhyme is less than it used to be, so new forms of poetry appear. Unless the artist disciplines his creativity, however, his works are soon forgotten.

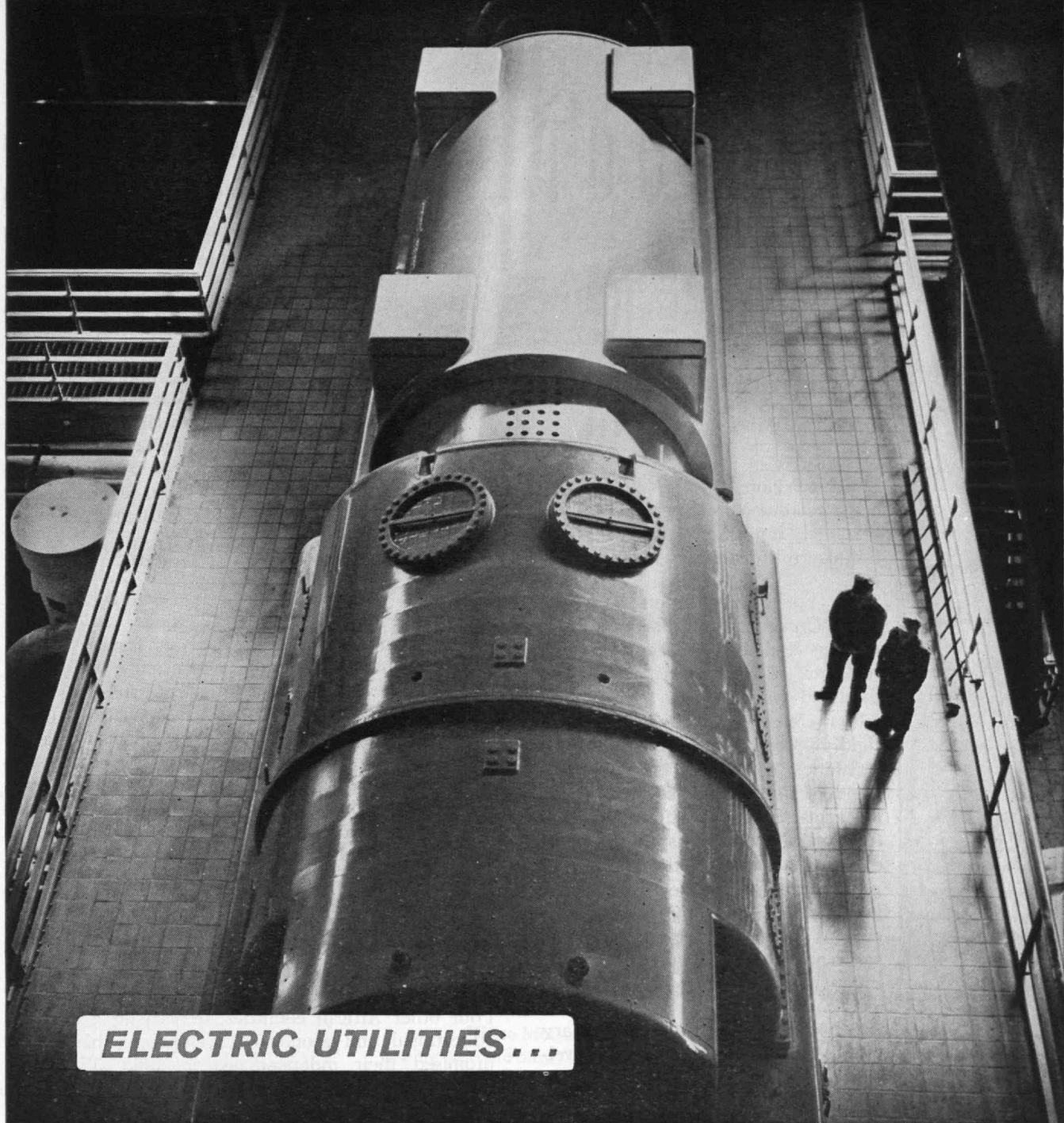
The perspiration of genius comes somewhat from helping to bring ideas to birth, but even more from shaping them with the needed disciplines. Beethoven heard angelic music in his mind, but his notebooks show how thoroughly he worked over each theme, fitting them one to another, and all into a unified whole. Such activity results in a strong likelihood that a work of art will exceed in its entirety the parts the artist is putting together. Witness the poet who said he could not tell what his poem would be about until it was completed. So with the scientist polishing a new hypothesis. The new relations he discovers are innate, and frequently not of his selection.

Though vast differences still remain between art and science, many of them are matters largely of degree. The scientist must think in rigorous quantitative terms, and he is likely to believe himself impatient with intuition. He considers this vagueness and possibly prejudice. He objects also to taking things on faith. Nevertheless, intuition and faith are both his sharpest tools. What is important is that he follow through to check the results of his intuition and his faith. He knows that his new hypothesis, his work of art, must stand the close scrutiny of his fellows. They, in assessing it in terms of other parts of the great mural of science, need only rely on the answers nature will give, in the laboratories and in the heavens, to the questions they propound.

Quoting Malraux again: "It is perhaps not a mere coincidence that of all the great masters of painting, the one who had the most far-reaching influence was the only painter for whom art was not his sole interest in life, Leonardo da Vinci." Leonardo was not a scientist, for his inventions lean more to a technology that was centuries too soon, but he had the genius of both science and technology as well as art.

The scientist is deliberately trained to be an intellectual who does not shrink from change, but welcomes and attempts to guide it. Most scientists are far more optimistic about the future of civilization than are the run of poets and painters. "Research," says Kettering, "is nothing but a friendly welcoming attitude toward change . . . It is the tomorrow mind instead of the yesterday mind." Herein may lie the secret of the present ascendancy of science.

But the resemblances of science and art are far greater than their differences, and deserve more emphasis. Together they share the basic elements of beauty: reduction of chaos to order, of complexity to simplicity, and above all, of universality.



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One of the great values in an American student's attending an institution like M.I.T. is the opportunity it gives to get to know and associate with foreign students, men of all races with differing backgrounds, philosophies, and cultures. Their presence here enriches this institution. Just as they can learn from our way of life, so we Americans can learn from theirs.

International Civil Servants

It is no disparagement of the rich cultural and philosophical backgrounds of these nations just emerging into independence for us frankly to say, however, that, because of their usually widespread mass illiteracy and lack of experience in self-government in an industrial age, we have misgivings as to how successful some of these experiments in democratic self-government will be unless the more experienced nations proffer help and the emergent nations are willing to accept it.

Probably economic aid will not be sufficient by itself to keep many of the newly independent underdeveloped nations outside the communist orbit.

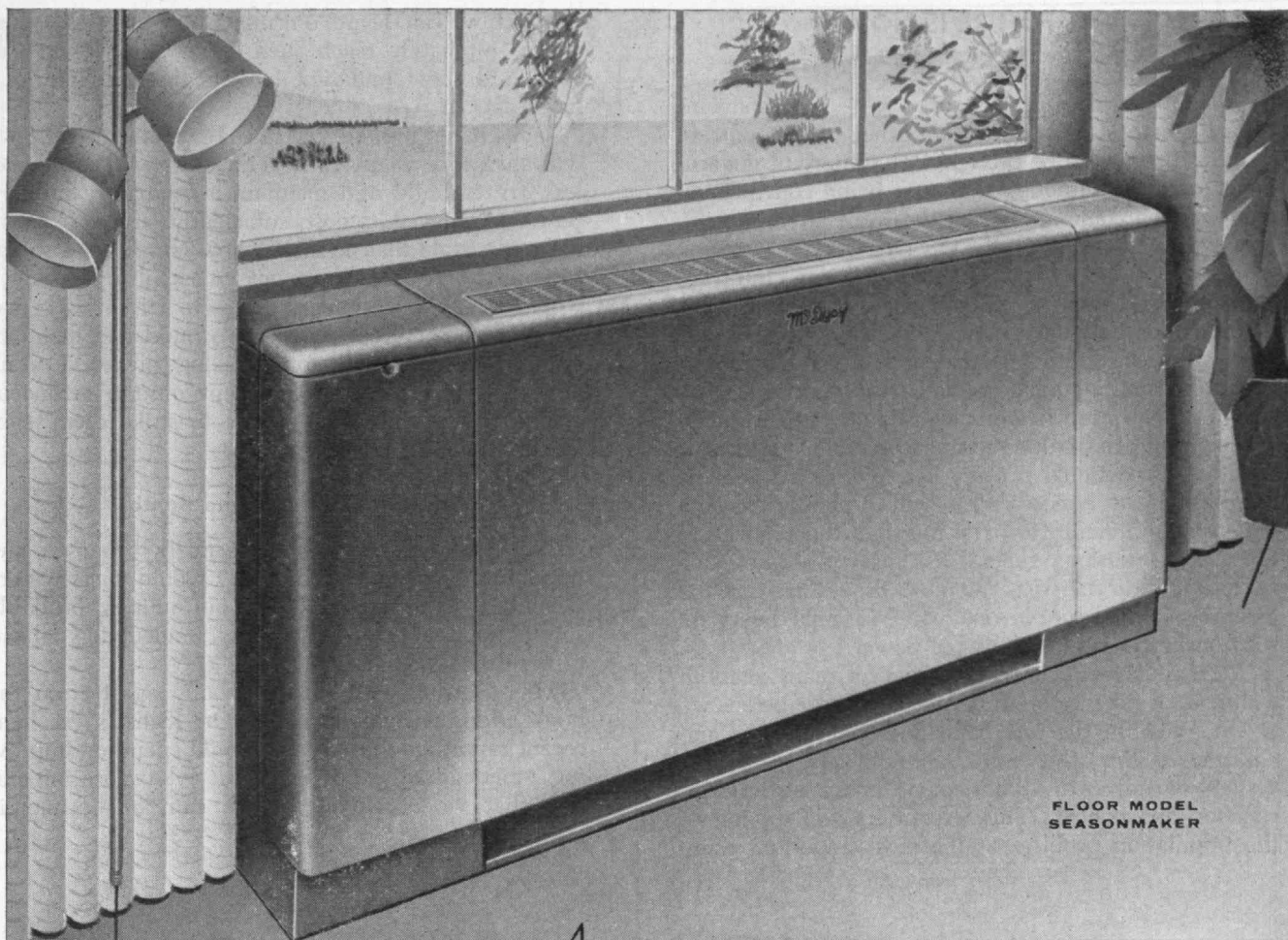
Many of these new states are not competent to function as democracies because they do not have enough educated, qualified personnel to fill the necessary government positions. Of the newly emergent countries, French Guinea is probably an example. Four other African countries, of varying degrees of educational and economic development, have been promised their independence in 1960. These are Nigeria, Togoland, the Cameroons, and Somalia.

Consider for a moment Somalia, on the Indian Ocean in east central Africa. It was an Italian colony until the end of World War II. The people of Somalia have never had a written language of their own. I have not been there, but I am told that probably not more than 40 or 50 Somalians out of a population of 1,500,000 can read and write *any* language.

How can one even hope that such a country as Somalia can function as a self-governing democracy after the United Nations mandate terminates next year? How can we expect Somalia to vote intelligently and responsibly in the United Nations, to which it will presumably be elected, and where its assembly vote will equal ours?

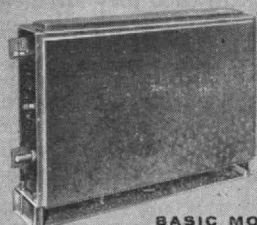
Perhaps through the United Nations we might create a large corps of international civil servants to assist emergent nations like Somalia with their inter-

(Continued on page 538)



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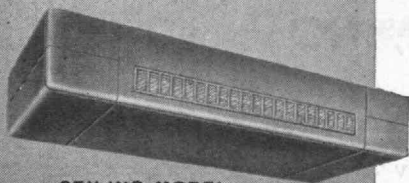
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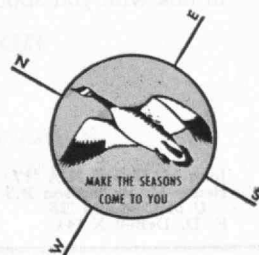
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THE FUTURE IS NOW

(Continued from page 536)

nal administrations. If these men were Scandinavians or Latin Americans or citizens of other small countries, perhaps they could be brought into important government positions without the charge being convincingly made by the communists that we were attempting to restore colonialism.

In many of these new Asian and African countries, probably the best we can hope for are benevolent dictatorships that will spread popular education and raise standards of living under either American or preferably multinational guidance and support.

As to the United Nations, we should put the problem of what can be done to improve and strengthen it high on our national priority list. We should realize, moreover, that henceforth it will probably become increasingly difficult for us to marshal the majority in the United Nations general assembly that we have been able to in the past. We must also realize that the assembly's "one nation, one vote" formula bears no relationship to responsibility or power.

We may have to continue to live for many years in a climate of potential mutual nuclear terror before we of the West on the one hand and the Russians and Chinese on the other can eventually agree on some system of universal disarmament under airtight inspection and control. This, except for the solving of the population problem, is the most important thing

to which we can devote our minds and energies. When we do ultimately reach such an agreement we will have laid the foundation for the beginning of real world law.

I take it for granted that in the meantime, while we will always be ready to negotiate, we will, nevertheless, try to build and maintain a retaliatory military power, whatever its cost, sufficiently strong so as to make it certain that no matter how crippled we might be from a surprise nuclear missile assault upon us, we would be able without question to strike back and give Russia a mortal blow. If we build and maintain such an instant retaliatory striking power, I don't believe the Russians will, except on the erroneous assumption that we were about to strike them, ever launch a nuclear attack on us.

Industrialism and the Bomb

The new weapons are so fantastically expensive and become obsolete so rapidly that I would guess we are going to have to spend more on our military, probably substantially more, in the years immediately ahead rather than less.

This growing expenditure, wholly apart from the huge additional amounts that Dr. Killian's excellent recent report emphasizes we should spend on improving American education, makes it even more imperative that we accelerate, if we can, our economic

(Concluded on page 540)

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We believe that you might be interested in just how your favorite molecular offspring would be treated if you choose to enroll them in our training school for high polymers and plastics. Our research and development laboratories are devoted (if you don't remember) to keeping your polymer problem children on the straight-and-narrow, and to see that they are well trained and educated in the skills and graces of economic and productive life and able to make a living on their own. This may start as early as the moment when they are merely a gleam in their parent's eye, or as late (unfortunately) as those sad instances when we must sit in as professional mourners and aid in the final services.

There is many an exciting program ahead for some of the lucky polypupils who have been enrolled by their thoughtful corporate parents. Some will be schooled to be very superior molecules who can resist being burned up, or breaking under stress, or who have excellent stick-to-it-iveness. Others are trained to be rough and ready, to go a long way on a dollar, or to be as slippery and facile as a Lavender Hill Mobster. Some are being readied for a new course in ultra-sonic treatment and applications, some in semi-conductors, and some in the elite corps of hyper pure materials and as dielectrics.

Some of the more fortunate plastics progeny are being styled and designed into packages and consumer products of all types and can go forth into commerce with the calm assurance afforded by careful schooling. Other of our wards graduate as specialized materials who have a single purpose in life and go out to fill that niche.

Along with the very nice groups of people we do business with, we like to include a couple of very near and dear relatives. The first, D & R Pilot Plants, Inc., our nimble associate who is adept at handling those graduates from the laboratory that are not yet big enough to command the full attention of their sponsors. The other, D & R Plastic Welders, Inc., is enjoying the parental limelight having just introduced an improved lightweight offspring in its line of plastic welding equipment.

Let us know if you would like to bring any of your plastics or high polymer problem children to us for training. Our entire staff and facilities are devoted to bringing them under control and uncovering their latest talents. Enroll your recalcitrant polyjuvenile now. We have a very nice group living-in at this time and will be delighted to talk with you about the curriculum.

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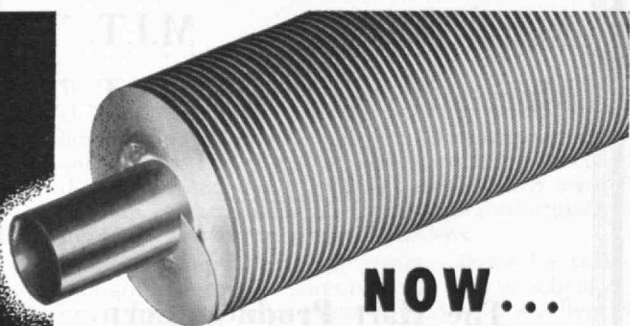
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THE FUTURE IS NOW

(Concluded from page 538)

growth. More and better education and more and better research, both basic and applied, are, of course, the roads to greater productivity.

The American idea has always been a dynamic idea. Just the maintenance of the *status quo*, either here or abroad, is not an acceptable answer for the United States. We must move ahead on all fronts. Time is not necessarily on our side. The future is now.

You who fortunately have had the benefits of an M.I.T. education have far more responsibility and a much deeper obligation to help see to it that our country does the things it should do than have those of your generation who haven't had the educational advantages that you have had.

The Turning Point

We are at an epochal turning point in world history. For the first time it has now become economically possible, provided we find some means of checking excessive population growth, to distribute within a few generations all the benefits of civilization to all the people on the globe.

The impact of Western industrialism on Asia and Africa may well outrank even the atomic bomb in importance when future historians — if there be any — appraise the developments of the Twentieth Century.

Most of these peoples of Asia and Africa have colored skins. They are unlikely for long to accept our political philosophy or follow our leadership unless we begin treating our own Negroes here as fellow Americans fully entitled to the same heritage of freedom that we whites cherish for ourselves.

And as we approach the age of space travel, perhaps psychologically as important as anything that has ever happened in man's existence, we must realize that we must first solve the imperative problems that exist right now on this planet, or our children and their descendants will neither survive in freedom nor get to know the universe.

The problems facing your generation are immense, more challenging than any your ancestors ever faced. But you are better educated and so better prepared to solve them.

Good luck to you!

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Edited by Arthur R. von Hippel

Published in April, 1959, this book is the final volume in a trilogy on modern materials research, edited by Professor von Hippel and containing chapters written by specialists in both academic and industrial fields. Professor von Hippel states in the Preface that the "development of molecular engineering spells the end of the specialization of the past, where scientists and engineers of the various disciplines were walled up from each other in airtight subdivisions of schools and departments. The time of synthesis has arrived, in which we begin to think about the fundamental properties of matter and their applications in unified vision." Thus the volume expresses a development of ideas that has significance for all branches of science and engineering. \$18.50

Noise in Electron Devices

Edited by Louis D. Smullin and Hermann A. Haus

A discussion stressing the mathematical theory and basic physical phenomena of noise in electron devices. The book is based on a special summer session on noise in electron devices held at M.I.T. in 1955, and is a comparison of the various treatments of noise. Problems of noise due to thermionic emission, the general circuit aspect of noise in microwave tubes, and some of the detailed engineering solutions to the problems encountered in the design of low-noise traveling-wave tubes and space-charge control tubes are considered by specialists drawn from both industrial and academic fields. \$12.00

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COMMENCEMENT EXERCISES

(Concluded from page 493)

ment program, and was attended by about 1,800 relatives and friends of the graduates, members of the Corporation, Faculty, Alumni Association, and administrative staff. Among the honored guests at this less formal gathering were the 30 members of the Class of 1909 who had participated in the exercises.

President Stratton, who presided at the luncheon, recalled the uncertainties about the future of the Institute when these men were students, and the discussions of merging M.I.T. with Harvard University which were ended when Richard C. Maclaurin was inaugurated as President on June 7, 1909. He ascribed much of the Institute's growth and prosperity to the efforts of the 251 men who were the first to receive their diplomas from President Maclaurin. Three members of this class, Thomas C. Desmond, Bradley Dewey, and B. Edwin Hutchinson, have served a total of 68 years as life members of the M.I.T. Corporation.

Mr. Desmond, speaking in behalf of the Class of 1909, eulogized the Institute's dedicated teaching staff, expressed confidence that M.I.T. would be recognized increasingly as the outstanding school of its kind in the world, and quoted the late President Karl T. Compton's advice to the graduates: "The world needs you but it may not know it. Therefore, you must prove it."

Mr. Sampson, speaking for the Class of 1959, described M.I.T. as "a thinking man's school," alluded to the tuition increases, Walker food, and Boston weather, and emphasized the opportunities that are given to M.I.T. students to assume responsibilities of many kinds. He and his classmates, he said, have had a long row to hoe, but most of them will postpone their entry into the cruel, cold world still longer, by going into military service or continuing their education in graduate schools.

President Stratton also introduced and praised the work of the two members of the Faculty who are retiring this year—Shatswell Ober, '16, and Stephen G. Simpson, '16. A reception at which the President and Mrs. Stratton and Corporation Chairman and Mrs. Killian headed the receiving line followed the luncheon.

The weather on Commencement Day could not have been finer.

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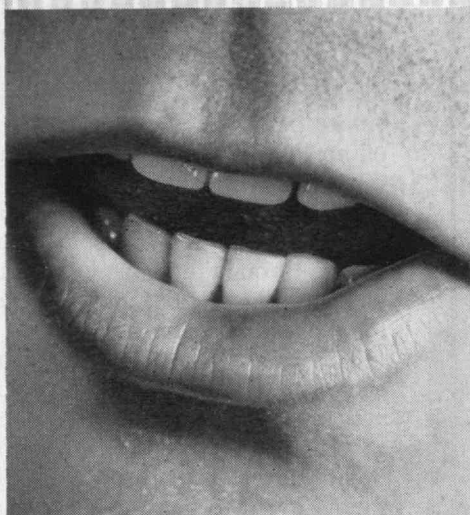
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THE THIRD OFFENSIVE

(Continued from page 500)

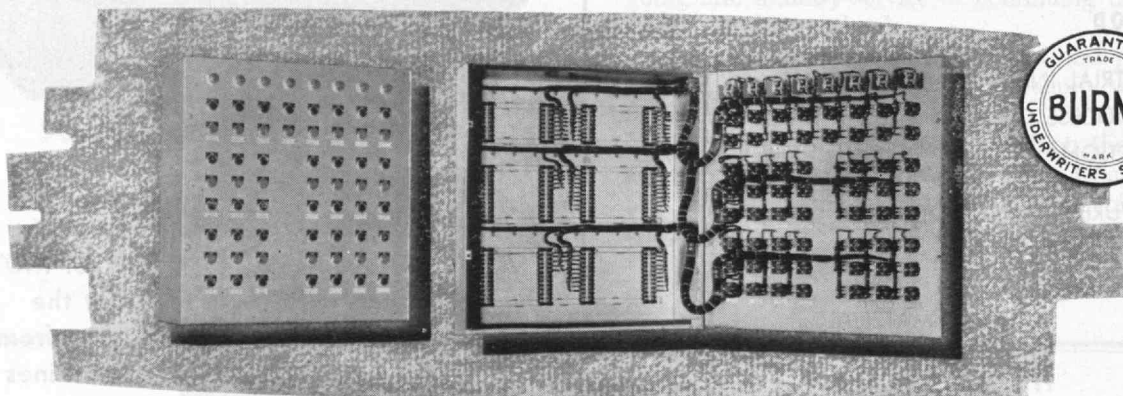
Choir abroad, the great sums of money invested in modern works of art — they are all testimony to this surging interest in cultural manifestations and to the lively seeking everywhere of human values, of those values particularly which are the fruits of individual effort, of individual concern and commitment, the power of which it is impossible to overestimate because it gives meaning to the inner life of performer and spectator alike, a meaning which sustains and reassures through the inflictions which our large political and social institutions must impose as the price of material-organized survival.

This resurgence of interest explains M.I.T.'s insistence that you, as engineers, scientists, managers, planners and scholars, understand not only the techniques of your calling but also the roots of human motivations and the higher aspirations of our evolving civilization. My own field of interest can well serve as an example in explaining the meaning of this concern. We have recently become aware of the plight of our cities. Built mostly during the last two centuries, under different sets of requirements, they are no longer adequate to serve the needs of a modern society. A fever of renewal is in the air; the enormous growth of our population, the prosperity of our people, the advent of fast means of transportation, have brought new dimensions and enormous difficulties to the problem of giving form to the new environment. It must certainly be

(Concluded on page 546)

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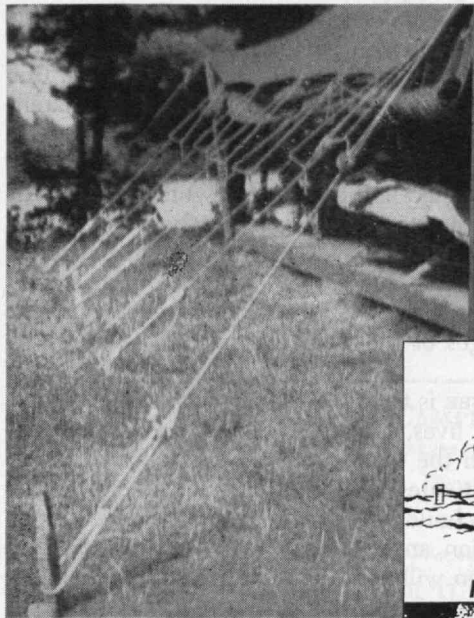
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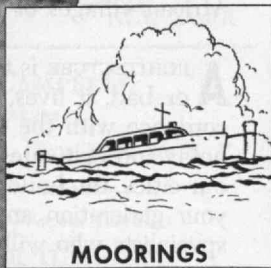
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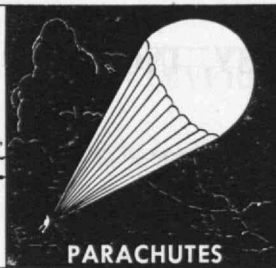


TENTS

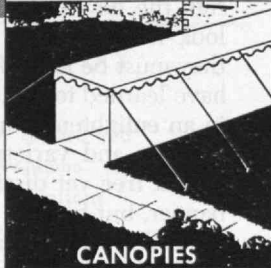
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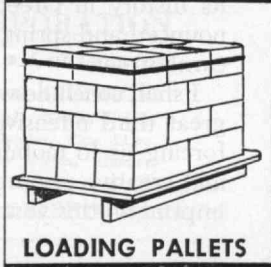
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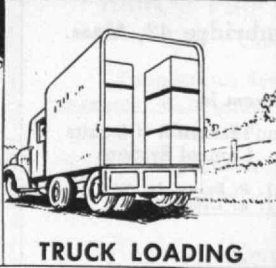
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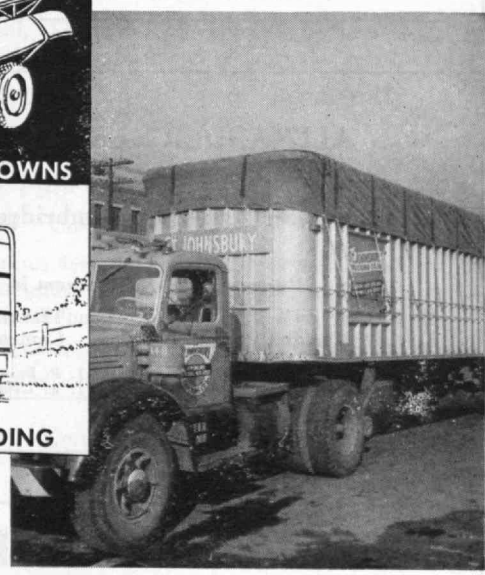
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THE THIRD OFFENSIVE

(Concluded from page 544)

more than a merely efficient system of accommodating the multitudes; it must become the affirmation of man's nobility and testify to his abiding need for beauty. But we know that such an ideal environment is intimately related to all other values.

A group of savages would soon make a slum out of a new well-planned housing project, while people with taste and discrimination would know how to turn an old slum into a charming Georgetown. On the other hand and to be fair, automobile dumps, hot dog stands and telephone poles would not improve the lovely African villages of the Cameroons.

ARCHITECTURE is the synthesis of a civilization—good or bad, it lives, grows, flourishes, and dies in accordance with the ideals and values such civilization holds and cultivates. The renewing and embellishing of our cities, the building of new ones, will be the task of your generation and the ones after yours. The many specialists who will be called upon to devise and design the new environment will not always be able to look in manuals or history books for the answers—they must be men of vision and courage, men who will have learned to think for themselves, to reach decisions in an enlightened imaginative way, to see life in all its richness and variety as a great challenge to be met with a free yet disciplined mind. Beauty will be their banner, but beauty, as Emerson said, "will not come at the call of the legislature, nor will it repeat in America its history in Greece; it will come, as always, unannounced and spring up between the feet of brave and earnest men."

I shall conclude with the optimistic thought that this great third offensive for men's minds and hearts, by forcing us to mobilize in depth our finest intellectual and creative resources, could well make a memorable imprint on this your age of great expectations.

The Next Humanities Series

The Humanities Series of concerts on Sunday afternoons in Kresge Auditorium will begin October 25, when the New York Pro Musica will appear. Other concerts next season will be by the Camera Concerti, a new chamber orchestra, on November 15; the Paganini quartet, on January 17; the Juilliard quartet, on March 13; and a duo piano team, Arthur Gold and Robert Fizdale, on April 10.

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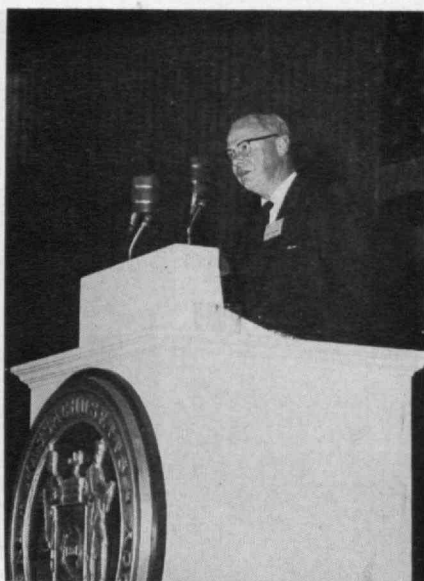
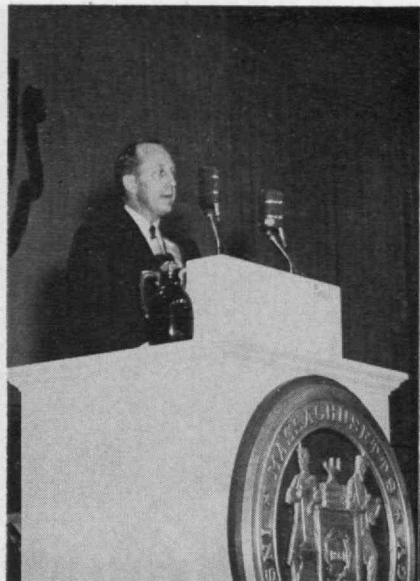
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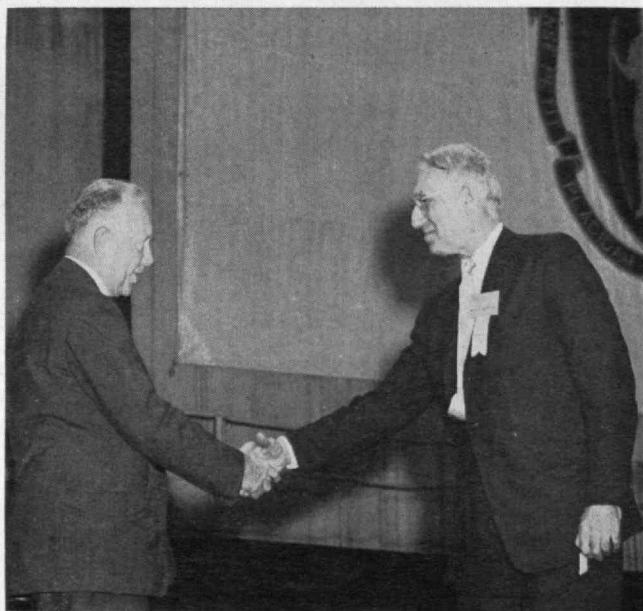


The Alumni Day Meeting in the Rockwell Cage

Above: Henry B. Backenstoss (left) announcing the gift of the Class of 1934, which held its reunion on the campus the weekend of June 14; Wilfred O. Langille, '19, speaking for his class which was the first to make a class gift to the Institute on its 40th anniversary; and Edward J. Hanley, '24, who took office during this meeting as the 66th President of the Alumni Association, praising the work of his predecessor.

At right: President Stratton shaking hands with Maurice R. Scharff, who presented the gift of the Class of 1909.

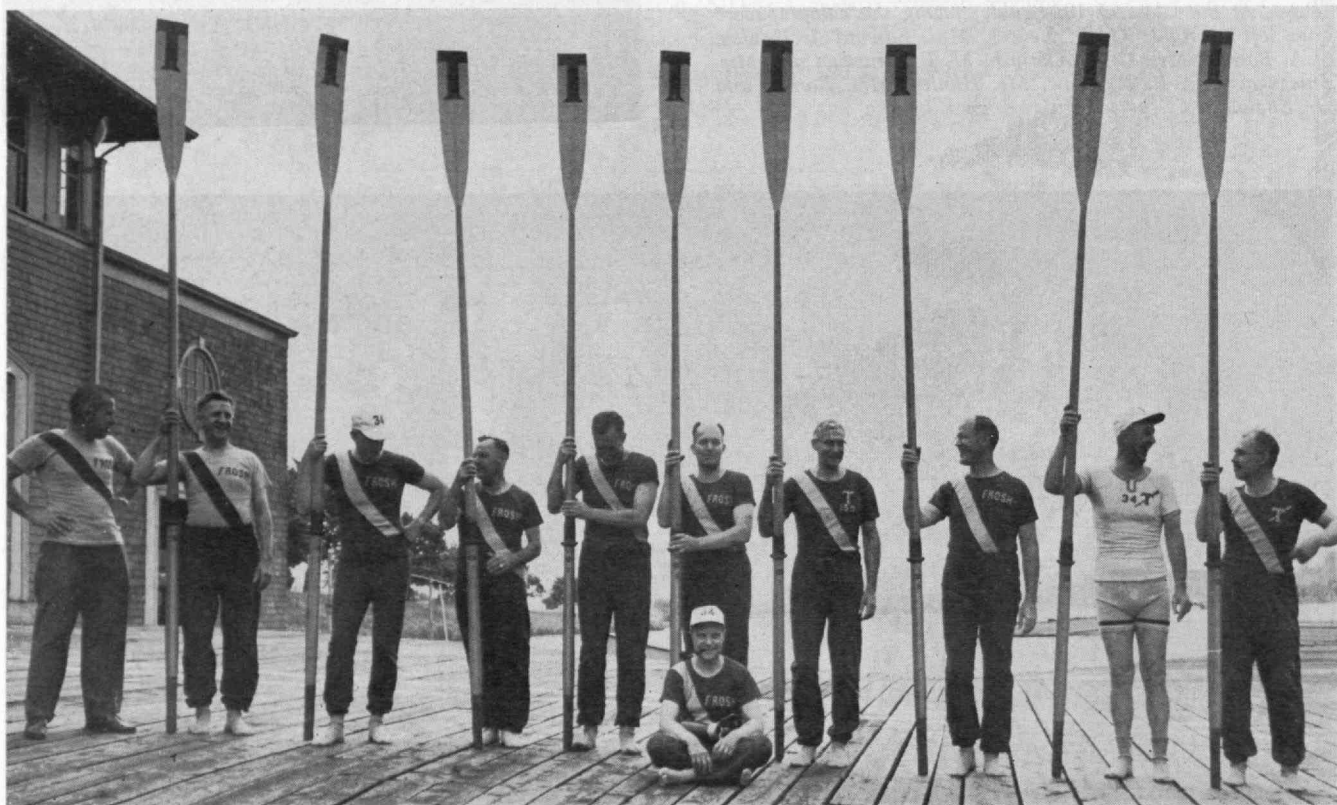
Below: At the Class of 1924 table, facing the camera, were from left to right: G. R. Lehrer, Mrs. Edward J. Hanley, F. A. Barrett, Mrs. C. M. Cornish, M. F. Amezaga and Mrs. Amezaga, Mrs. F. R. Shaw, Mr. Hanley, Mrs. Barrett and Mr. Shaw.





Seven of the 17 surviving members of the Class of 1894 dined at the M.I.T. Faculty Club on the eve of the inauguration. Speaking to them above is Professor Samuel C. Prescott, their class secretary. Horace A. Crary, President of the Class, gave the dinner.

The 1934 men below (from left) are Arthur J. Manson, Jr., Alexander J. Rogowski, Charles W. Jerome, Charles E. Sanders, Robert K. Roulston, Charles L. Wright, Jr., John L. Newbegin, Allen Q. Mowatt, '35, Charles H. Lucke, Jr., and John W. Westfall, with Lawrence B. Stein, Jr., in front.



ALUMNI AND OFFICERS IN THE NEWS

Promotions . . .

In addition to the 25 recorded on page 490, other Alumni have been promoted, elected, or appointed as follows:

TREVOR K. CRAMER'30 as a director, Chelsea Savings Bank, Chelsea, Mass. . . . RODNEY D. CHIPP'33 as director of engineering, I.T.T. Communication Systems, Inc., unit of International Telephone and Telegraph Corporation. . . .

GEORGE R. ROBINSON'36 as assistant director of engineering, Union Carbide Plastics Company, Bound Brook, N.J.

RAYMOND A. WEBSTER'37 as chief engineer, Willingboro Municipal Utilities Authority, Levittown, N.J. . . . MRS. ABBOTT GOLDBERG'41 as president, San Francisco Council of Jewish women. . . . ARTHUR J. WEINBERGER'41 as chairman, Fairfield County Chemical Society, Connecticut.

WILLIAM L. SAMMONS'43 as general sales manager, B-I-F Industries, Inc., Providence, R.I. . . . JAY J. MARTIN, JR., '44 as director of Supporting Services, Arthur D. Little, Inc. . . . JOHN F. GAFFNEY'45 as advisory engineer, Advanced Systems Simulation Laboratory; and ROBERT J. CANTWELL'50 as senior engineer, systems studies, Advanced Systems Research, Owego, N.Y., facility, International Business Machines Corp.

DONALD E. BURKE'46 as plant manager, Allied Products Manufacturing Company, Inc., St. Petersburg, Fla. . . . LIEUTENANT COLONEL ROBERT B. BURLIN'48 as assistant area engineer on construction of the Distant Early Warning Line extension across Greenland, Eastern Ocean District, U. S. Army Corps of Engineers. . . . CLIFFORD P. SELL'48 as industrial area sales manager, Permaglas Mechanized Storage Units, A. O. Smith Corp., Ill.

SAMUEL J. SABBAGH'49 as purchasing agent, Fitchburg, Mass., operations, Independent Lock Company. . . . JOHN D. EICHENBERG'49 as supervisor, Post-Irradiation Examination, PWR project, Bettis Atomic Power Division, Westinghouse Electric Corporation. . . . DAVID E. GUSHEE'50 as technology editor, *Chemical and Engineering News*, a publication of the American Chemical Society.

WILLIAM W. HEILMAN'51 as assistant manager, Niagara Works, Union Carbide Corp., Niagara Falls, N. Y. . . .

STANLEY H. VEGORS, JR., '51 as head of the Physics Department, Idaho State College. . . . JOHN P. LYNCH, JR., '52 as chairman of the 1960 New England Regional Conference of the American Institute of Mining, Metallurgical, and Petroleum Engineers.

Books . . .

Descriptive Meteorology, by FREDERICK SANDERS'54 and HURD C. WILLETT, Professor of Meteorology. (New York: Academic Press, 1959, 355 pages, \$7.50.)

Birthdays . . .

Birthday greetings are in order during July and August for four Alumni who will turn 90; twelve who will become 85; and twenty-eight who will celebrate their 80th birthday, as listed below with dates of birth:

July, 1869 — MRS. FRANCIS H. KENDALL'92 on the 5th and AMBROSE WALKER'91 on the 13th.

August, 1869 — CHARLES W. POWER'89 on the 1st and HENRY E. EDWARDS'94 on the 14th.

July, 1874 — CHESTER F. DRAKE'98 on the 1st; JAMES D. BURNS, JR., '00 on the 4th; GEORGE A. ABBOTT'08 on the 7th; MISS HATTIE L. GATES'96 on the 10th; WALTER HUMPHREYS'97 on the 14th; and E. PERCY BROWN'97 on the 17th.

August, 1874 — EZEKIEL C. SARGENT'97 on the 7th; EDWARD T. FOULKES'98 on the 14th; JOHN S. BOYD'97 on the 17th; HARRIS G. HOOPER'00 on the 24th; ARTHUR C. LAWLEY'98 on the 25th; and MRS. HENRY C. GRANT'95 on the 28th.

July, 1879 — ROBERT K. CLARK'05 and BEN C. MOOERS'04 on the 1st; AUSTIN C.

WOOD'02 on the 2d; CHARLES BOARDMAN'02 on the 6th; IRVING E. ADAMS'04 on the 7th; HARRY L. GRANT'00 and BERTRAM A. RICHARDSON'04 on the 8th; JOHN W. HERR'02 on the 12th; STEPHEN A. GARDNER'02 on the 15th; PERKINS BOYNTON'01 and CLIFFORD S. DEWIS'04 on the 16th; OLIVER M. WIARD'04 on the 18th; ANTHONY W. PETERS'01 on the 22d; ARCHIBALD H. EHLE'02 on the 24th; JOSEPH P. CATLIN'01 on the 25th; and FLOYD A. NARAMORE'07 on the 31st.

August, 1879 — W. LORRAIN COOK'03 on the 4th; FRED W. CLAFLIN'01 and HARRY R. HEALEY'01 on the 8th; F. WARD COBURN'01 on the 9th; WILLIAM A. HOWELL'03 on the 12th; HERMAN J. CASS'03 and WILLIAM B. HUNTER'08 on the 17th; CHARLES A. LEARY'00 on the 18th; GEORGE E. BRADLEY'04 on the 21st; JOSEPH W. BALLARD'02 and CHARLES H. BURR'02 on the 22d; and CHARLES T. LINCOLN'01 on the 29th.

With the addition of these 44, the rolls of the Alumni Association will include a total of 83 nonagenarians and, in addition, 768 octogenarians.

Obituary

GEORGE OWEN'94, April 21*
ARTHUR M. TRACY'94, May 5
MRS. FRANK S. CHURCHILL (LUCRETIA M. HALLOWELL)'96, May 4, 1958*
IRVING S. MERRELL'96, May 10*
EDWIN H. ROBERTS'96, February, 1959
ERVING E. STEVENS'96, April 18
CHARLES E. TROUT'96, April 19*
JOHN H. WILLIS'96, May 20
MRS. ALBERT P. MATHEWS (JESSIE G. MACRUM)'97, December 13, 1958*
JOHN W. FARLEY'98, March 12
WILLIS L. LEARNED'98, April 25
F. MINOT BLAKE'99, April 24
EDWIN R. SHEAK'99, April 14*
FREDERIC B. STEARNS'99, April 25*
GEORGE H. ARCHIBALD'00, April 26*
WILBUR W. DAVIS'00, April 15*
MRS. D. C. DENNETT (ELIZABETH G. REDFERN)'00, April 13*
ARTHUR W. GEIGER'00, November 1, 1958*
BERTRAM C. HOPEMAN'00, September 28, 1958
MISS MARGARET LONG'00, August 29, 1957*
ROBERT W. STROUT'00, February 22, 1958*
HENRY TUBBS'00, July 22, 1958*
FREDERICK H. BOND, JR., '01, May 11
ROBERT WHITE, JR., '01, January 16
JOHN L. JONES'02, April 14*
ARTHUR T. NELSON'02, May 4*
PHILIP R. SMITH'02, December 17, 1957
HALSEY FRENCH'04, August 19, 1958
EDWARD D. PERRY'05, March 31*
MISS ADELAIDE M. ABELL'09, May 19, 1955*
HOWARD P. BELKNAP'09, November 27, 1956*

HUBERT O. JENKINS'09, April 27*
HAROLD M. SYMONS'09, March 18, 1958*
ALLAN J. CHANTRY, JR., '10, April 9*
CHARLES E. CREECY'10, January 29
JOHN J. HIGGINS'10, August 17, 1958
HALE SUTHERLAND'10, May 22
BERT S. WOHLGEMUTH'10, March 23*
HARRY L. MANLEY'11, May 14
ROGER W. DAVIS'12, April 13*
JOSEPH W. FARWELL'12, April 16*
FRANK MOORE'12, February 1*
FREDERICK C. HETTINGER'14, February 1*
HOWARD A. MORRISON'14, May 23
DUNCAN SHAW'14, May 5*
BYRON Q. JONES'16, March 30
CHARLES T. WILSON'20, March 5
WILLIAM F. ATWOOD'21, April 26*
JOSEPH D. NAGEL, JR., '21, 1956
GEORGE THOMSON'21, May 26
GREGORY M. LOUKIANOFF'22, February 27
ELI LURIE'22, 1952
JOHN E. HENDRICK'23, March 7, 1957
DAVID K. GRANT'24, April, 1958*
GLENNON GILBOY'25, April 17*
HARVEY W. CULP'26, May 10
AUSTIN S. FORD'26, January 14
BENJAMIN F. WOOD'27, September 29, 1958*
GEORGE A. SANDERSON'31, April 12*
LUTHER B. TURNER'31, March 5*
JOHN B. CALKIN'32, April 19*
ALVIN SLOANE'35, May 25
ROYDEN E. BEEBE, JR., '36, April 29
NATHAN H. SANDERSON, JR., '38, September 13, 1958
F. KIMBALL LOOMIS'40, April 30
DUDLEY A. BUCK'52, May 21
PAUL L. MATTHEWS'52, April 9*
*Further information in Class Notes



Corporation members who attended the Commencement Day luncheon and the inauguration included (above) Ralph Lowell, at left, and Hugh S. Ferguson, '23. Below with Chester L. Dawes, '09, is Bradley Dewey, '09, of the Corporation.



Lunching together in the Du Pont Court on Commencement Day were the three members of the Corporation who are pictured below from left to right: Robert C. Gunness, '34, B. Edwin Hutchinson, '09, and Thomas J. Watson, Jr.



One of the newest members of the Alumni Association, Richard L. Sampson, President of the Class of 1959, held the attention of the many older members of the Alumni Association present when he spoke at the luncheon after commencement.



NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Chicago

Our May meeting was held Tuesday evening, May 5, at the Furniture Club in the Furniture Mart. We were privileged to have Dr. Charles Stark Draper²⁶, Head of the Department of Aeronautics and Astronautics, and Dr. H. Guyford Stever, Associate Dean of Engineering, from Cambridge as our guest speakers.

Dr. Draper reviewed for us the advances made in aviation in the past 50 years and intrigued us with potential commercial applications of currently known military aircraft capabilities. Dr. Stever gave us some insight into the space flight advances and probable developments in the near-term future.

There was a lively discussion period following their presentations with questions being directed to both of our speakers. Of particular interest was the discussion of some of the guidance problems involved in the feats of the submarine *Nautilus* and in the Intercontinental Ballistic Missile program. Dr. Draper very adequately explained in layman's terms the problems and accomplishments in the technical development of inertial guidance systems.

About 100 members, wives, and guests were present; this undoubtedly was one of the outstanding meetings of the year. — J. T. SHUTACK, *Secretary*, Booz-Allen and Hamilton, 135 South LaSalle Street, Chicago 3, Ill.

Cleveland

With three meetings under its belt, the Cleveland Club enjoyed a most active spring.

On February 5, Charles H. Smith, M.I.T.⁴² and President of the Steel Improvement and Forge Company of Cleveland, brought the club up to date on business opportunities in foreign countries. Steel Improvement and Forge Company has built or is building factories in Argentina, Brazil, and India.

The club was particularly fortunate to have Dr. John E. Burchard²³, Dean of M.I.T.'s School of Humanities and Social Studies, as the speaker for the April 2 meeting. Dr. Burchard's talk, entitled "M.I.T. Today and M.I.T. Tomorrow," delved into every facet of the Institute and kept the largest gathering of the year glued to seats throughout.

The final meeting this spring, the annual ladies night affair, was scheduled for the last week in May and highlighted by an excursion trip up to Cuyahoga and dinner at Captain Frank's East 9th Street Pier Restaurant.

Cleveland Club officers will remain the same for the 1959-60 year with the exception of treasurer and assistant treasurer. Kenneth A. Benjamin⁵⁰ moves up from

assistant treasurer to treasurer, and Dan Test⁵⁰ now fills Ken's old job. The club wishes to thank Tom Weil⁴⁹, past Treasurer, for his excellent job during the past two years.

In closing I would like to pass along a most welcome recent announcement made by our Club President H. Arthur Zimmerman³⁷. M.I.T. President J. A. Stratton²³ will speak to the Cleveland group next fall, probably in November. Keep an eye out for future announcements concerning this all-important meeting — HEATH OLIVER⁵⁵, *Secretary*, 1133 West 9th Street, Cleveland 13, Ohio.

Indiana

The Indianapolis club notes last appeared in the 1958 summer issue of *The Review*. Shortly thereafter, the final meeting of the '57-'58 season was held. This was a barbecue picnic dinner held at the Indianapolis Water Company's lodge at Morse Reservoir. A large number of Alumni attended with their families, and everybody enjoyed himself immensely.

The program for the 1958-59 season was patterned much along the same lines that had proved successful in past years. The Indianapolis area includes a very interesting and varied group of M.I.T. Alumni representing just about every area of professional endeavor. The primary purpose of our club has been to bring this group together. Occasional dinner meetings during the winter and spring for Alumni, their wives, and guests have resulted in very enjoyable and entertaining evenings.

Three formal dinner meetings were held on November 4, 1958, January 27, and April 20, 1959. All of these meetings were held at the Continental Hotel, and our after-dinner speakers were Dr. Joseph C. Muhler, of fluoridation and Crest tooth paste fame; Professor Samuel Hopper³³, Alumnus and chairman of the Indiana University Medical School Department of Public Health; and Mr. Izler Solomon, director of the Indianapolis Symphony. Thanks to Mr. Howard Morse, we shall again be able to have a picnic meeting at Morse Reservoir for our last meeting this month. The following slate of officers has been proposed for election for the 1959-60 season: President, William E. Rogers, Jr.⁵⁰; Vice-president, Stefan J. Garvin⁵⁰; Secretary, A. Paul L. Hotte⁴².

The following Alumni and their ladies attended the meetings of the 1958-59 season: Mr. and Mrs. Thomas G. Harvey²⁸; Mr. and Mrs. Lowell L. Holmes²³; Mr. and Mrs. J. Raymond Ramsey¹⁷; Mr. Howard S. Morse⁰³; Mr. and Mrs. John T. Fisher³⁴; Mr. Dale Gubbins⁴⁹; Miss Eugenia Dritsas²⁵; Mr. and Mrs. A. Paul L. Hotte⁴²; Mr. and Mrs. S. J. Garvin⁵⁰; Mr. Arthur I. Franklin⁹⁸; Mr. and Mrs. Marshall D. McCuen⁴⁰; Professor and Mrs. Samuel H. Hopper³³; Mr. and Mrs. S. G. Pantazi, both⁴⁷; Mr. Frank J. Travers²³; Mr. and Mrs. W. Stewart

Roberts³²; Mr. and Mrs. A. Tower⁴⁴; Mr. and Mrs. John H. Babbitt¹⁷; Mr. William Rogers, Jr.⁵⁰; Mr. and Mrs. Joseph P. Rutledge⁵⁷; Mr. and Mrs. Harold J. Brown³⁰; Mr. and Mrs. Harold M. Oshry³⁵; Mr. and Mrs. Lloyd W. Irving²⁵; Mr. and Mrs. Gordon E. Holbrook³⁹; and Mr. and Mrs. John B. Welch¹³. — S. J. GARVIN⁵⁰, *Secretary*, 2157 Wilshire Road, Indianapolis, Ind.

Kansas City

On Friday evening, April 17, 1959, the M.I.T. Club of Kansas City played host to about 100 members of the various professional societies in Kansas City at a social hour and dinner meeting. Our speaker was Professor Walter G. (Walt) Whitman, Head of the Chemical Engineering Department of M.I.T., who talked on the subject of our atomic policy and the International Conference on the Peaceful Uses of Atomic Energy sponsored by the United Nations in 1955. As the result of the success of this affair, we contemplate holding a similar meeting in 1960. — LUIGI L. ROBINETT, JR., ³⁶, *Cosecretary*, 3401 West 71st Street, Prairie Village 13, Kansas.

Kentucky

A kickoff meeting of solicitors for the Alumni Fund took place at a luncheon at Kosair Temple on April 8. Those present were R. E. Christie³⁹, J. G. Hedberg⁵⁵, H. J. Lichtefeld⁴³, T. R. Metzger⁵⁰, E. D. Morey⁴⁹, G. C. Morrisette³⁵, R. A. Ormiston⁴⁸, A. M. Prentiss²⁵, E. A. Skonberg²⁹, W. R. Weeks²⁴. After a general explanation by Chairman Weeks and President Christie, assignments were made. The existence of a Kentucky Alumni scholarship was particularly emphasized, in the hope that all contributors would so earmark their donations.

The M.I.T. Club of Kentucky held a dinner meeting at the Louisville Boat Club with Dr. Omer Carmichael, nationally known superintendent of Louisville public schools, as guest speaker. A lively question and answer period followed Dr. Carmichael's talk. Besides the following Alumni and wives present, we had as guests Mrs. Carmichael and outstanding county students Louis Williams and Ed Hurley, who will be freshmen at M.I.T. next fall: Mr. and Mrs. T. P. Bailey²⁴; Mr. and Mrs. A. Cary³⁴; Mr. and Mrs. John L. Dawson, Jr.⁴⁴; Mr. and Mrs. W. C. Haberer²⁷; Mr. and Mrs. C. P. Hazelet¹⁸; Mr. and Mrs. J. G. Hedberg⁵⁵; Mr. and Mrs. E. L. Hurst⁴¹; Mr. and Mrs. J. R. Kane⁴⁴; Mr. and Mrs. G. C. Morrisette³⁵; Mr. and Mrs. A. M. Prentiss²⁵; Mr. and Mrs. H. D. Tomlinson⁵⁵; Mr. and Mrs. J. D. Ward⁴⁴; Mr. and Mrs. W. R. Weeks²⁴; Mr. W. Barnes³⁸; Mr. R. E. Christie³⁹; Mr. B. D. Crowley; Mr. H. J. Lichtefeld, Jr.⁴³.

Our next meeting, which will have taken place by the time these notes are read,

will be a picnic on or about June 10 — A. M. PRENTISS'25, *Assistant Secretary*, 2057 Douglass Boulevard, Louisville, Ky.

Miami Valley

The spring meeting, which was our third get-together of the 1958-59 season, was held Tuesday, April 28, 1959. A small but enthusiastic group gathered for a plant visit at the McCall Corporation in Dayton. This ably conducted tour, which was preceded by a pleasant dinner and informal meeting in the plant cafeteria, required approximately one and one-half hours to complete. We covered all of the production departments, most of which operate on a 24 hour a day schedule. This plant is the largest printing establishment in one location in the United States. While they print many magazines including *Newsweek*, *U.S. News and World Report* and, of course, *McCall's*, the largest single job is the printing of all editions of *Reader's Digest*.

All those present enjoyed a genuinely absorbing trip, and one could scarcely realize the passage of time except for the message of distress received from weary leg muscles.

As reported previously, our fourth and last meeting will be the annual family picnic scheduled for June 29 at Round Camp in Hills and Dales Park — CHARLES M. BILLMAN'25, *Secretary-Treasurer*, Winters National Bank and Trust Company, Dayton, Ohio.

New York

The club's annual meeting was held April 28 in the "Library" room of the Biltmore Hotel. Gene Smoley'19, presented his annual report as outgoing president after serving in this position two years. Gene emphasized the club's close affiliation to the Institute, saying that if future plans materialize, "we would be able to further promote educational activities relating to the Institute . . . scholarships, admissions interviewing, further technical sessions, and so forth."

Technical sessions have been the most successful activity of the club this year. It is with deep regret that we learned of the passing away of John Calkin'32, who headed the committee in charge of the technical meetings. John was one of the club's most active members and hardest workers and had been nominated as a vice-president for the coming year.

In the absence of Bernie Nelson'35, Head of the nominating committee, Francis Kurtz'22 read the list of officers and directors for 1959-60: Ed Edgar'35, President; John Casey'40, Gaby Garbarino'33, and Thornton Smith'45, Vice-presidents; Dave Buchanan'31, Treasurer; and your writer, Secretary. Three new directors elected for three years were: Joe Barker'16, Harvey Kram'42, and Gene Smoley'19.

On May 7 the fourth and final technical meeting turned out to be a great success with over 70 members and guests. Dr. Bernard E. Proctor'23, Head of the Food Technology Department at the Institute, spoke on "Technical and Economic Food Horizons." Professor Proctor talked about

radiation cycle fallout picked up by plants, population trends and their effects on the food industries, packaging effects on the distribution and retailing of food; he also gave statistics on the food industry from production to consumer. Bob Heggie'33 did a fine job as chairman for this meeting.

On the following Saturday, May 9, the Long Island section of the club sponsored a tour of the Brookhaven Laboratories, chairmanned by Myron Cantor'39. The tour, only open to members of the club, was enjoyed by 55 people, some from as far away as Vermont and Ohio. Many thanks go to the Brookhaven staff who did an excellent job of organizing the tour, which included visits to their cosmotron, alternating gradient synchrotron, hot chemistry laboratory (where they make radioactive iodine), and nuclear reactor.

The next big event, which will have taken place by the time this is printed, is the annual golf outing at the Scarsdale Golf Club, sponsored by the Westchester section. Bill Moore'33, chairman of this affair, plans a film showing on Hawaii, our newest state. A number of door prizes have been donated for the occasion by Alumni in the area. — JAMES M. MARGOLIS'52, *Secretary*, 218 Richbell Road, Mamaroneck, N.Y.

Puget Sound

Over 170 Alumni and guests were in attendance to hear Dr. J. A. Stratton'23, M.I.T. President, speak on "Scientists, Engineers, and Educators" at a dinner meeting held at the Seattle Tennis Club on April 30. Dr. Stratton was ably introduced by Horace W. McCurdy'22, who "dragged a few skeletons out of the closet" regarding Dr. Stratton's elementary school years, his years at Broadway High School, and his year at the University of Washington; such an introduction was much to the delight of the guests and to the amusement of the Strattons. At the conclusion of the Tech President's address, President Harry Carter'42, who presided at the meeting, presented Dr. and Mrs. Stratton with suitably engraved scrolls making them both honorary members of the M.I.T. Club of Puget Sound for life.

Vice-president Russ Winslow'40 acknowledged with thanks the good work of the phone committee; the "money takers"; and, last but not least, the work of Mrs. Winslow in making the dinner arrangements. Russ determined from those present that Professor Joseph Daniel'05 represented the oldest graduating class and Julius Bellaschi'58 the most recent, although others from the Class of '58 were in attendance. A good time was had by all, and this club was most pleased to have the Strattons with us for a stay.

Change in signals! There will not be a regional conference this fall as was announced in previous club notes. The work load on the Institute officials makes it imperative that the conference be postponed for at least a year. — FREDERICK I. FICKENWIRTH'52, *Secretary*, 5020 Baker Avenue, Seattle 7, Wash.

Rocky Mountain

A congenial group of 19 ladies and 26 men met for dinner Wednesday, April 22,

to celebrate the 70th year that the Rocky Mountain M.I.T. Club has been in existence and to hear Dean Pitre talk on "The M.I.T. of Tomorrow." The Hour of Charm before the dinner was most pleasant and gave all an opportunity to renew old, and form new, friendships. This is an important phase of our club activity due to the dramatic increase in the number of M.I.T. Alumni who have recently moved into this area.

Andy Pfeifferberger'49, as head of the nominating committee (himself, Charlie Brokaw'22, Bascom Birmingham'48, and Len Taigman), presented a new slate of club officers for consideration. After due deliberation and discussion the following were elected to hold office until our fall meeting in October: Joseph Bowman'41, President; Richard Glissman'56, Vice-president; Ben Oxnard'25, Secretary-Treasurer; Barnard Silver'57, Assistant Secretary-Treasurer.

The following were elected directors of the club to serve until our fall meeting in October: Sam Welch'26, Leonard Taigman'51, Frank R. Cook'32, James Johnson'52, Stephen Knight'44.

A discussion of possible dates for group meetings showed that a summer outing (June picnic), a fall (October) business meeting, and a spring (April) scholarship dinner were possible times acceptable to most club members.

Toastmaster for the evening was Charlie Brokaw'22. He won the honor as his bright red silk "Rush to the Rockies" vest was the outstanding sartorial display in this ultra-conservatively dressed group.

Mrs. Polivnick made a gracious speech of welcome to Dean Pitre on behalf of the ladies present. Norton Polivnick'41, as chairman of the current Alumni Fund drive, spoke about the encouraging results obtained to date in this worth-while endeavor.

Dean Pitre's speech was most interesting and brought the older members up to date regarding the new facilities at the Institute. He also gave the group a resumé of his afternoon meeting with our local scholarship applicants and the club's scholarship committee. After the speech, Dean Pitre ably answered the several questions asked from the floor about Institute activities, attitudes, and so forth. The evening was a real success and all of us wish Joe Bowman'41 a successful term as club president and assure him of our utmost co-operation with his program — BENJAMIN A. OXNARD'25, *Secretary*, P.O. Box 5308, Terminal Annex, Denver 17, Colo.; BARNARD SILVER'57, *Assistant Secretary*, 315 Clermont Street, Denver 20, Colo.

Schenectady

Professor Manson Benedict'32 flew from his full schedule at M.I.T. last February 25 to join with 45 diners at Schenectady's Locomotive Club. Warmed by a round of cocktails and served an excellent roast beef dinner, the group got into very good spirits. Dr. Benedict's appropriate talk charted for us the course of development of education in nuclear sciences at M.I.T. Dr. Benedict is the head of the Department of Nuclear Engineering. The authority of his position gave to the talk and to the question period which followed

the substance which the attending Alumni desire. Moreover, his charming manner and interesting talk, accompanied by slides of the Institute, held the interest of the wives. There are not many graduates from this new department; but one of those existing was at the dinner, since he holds a position at General Electric's Knolls Atomic Power Laboratory. He is Dennis Dougherty'56. The meeting arrangements were headed up by another of the Department's Alumni, Earl Reiback'56, who has a position at the Alco Products' Atomic Products Department. Too soon the evening stretched to late night, and we had to adjourn and Dr. Benedict flew back to Cambridge.

The nuclear sciences have been the theme of two luncheon meetings as well. Mr. William A. McAdams of G.E.'s Engineering Standards Department gave his impressions of the 1958 Geneva Conference on Atomic Energy based on his experiences there as technical advisor to the U.S. delegation. This was in January. In March Dr. Henry Hurwitz, Jr., gave an after lunch lecture on the present status of fusion research. Dr. Hurwitz, as manager of the Nucleonics and Radiation Section at G.E.'s Research Laboratory, is one of the nation's leading physicists. Still he brings this lofty field within some measure of comprehension by the use of simple language and analogies. In April Dr. R. H. Wentort, also from the G.E. Research Laboratory, talked on his pet project, the interior of the earth.

The final fling of the year was on May 16 when Mr. Ray Moeller told a fascinating tale of his sailing trip around the world. Mr. Moeller is a sales engineer at present but in his past is a well documented story which he unfolds before his audience. His talk is accompanied by slides of the voyage on the *Yankee* and the various islands and ports touched in the South Seas and other parts of the world. Seventy Alumni, wives, and guests attended this delightful affair at the Edison Club. The arrangements were headed up by Ted (E. B.) Judd'42. With that, the club's year draws near a close. — DAVID M. DENZER,'46, *Secretary*, 180 Lake Hill Road, Burnt Hills, N.Y.

Washington, D. C.

Two hundred and thirty-one members and guests attended the May dinner meeting of the M.I.T. Club of Washington, D.C., held on May 15, 1959, at the Cosmos Club. We enjoyed an excellent talk by Professor Joseph B. Rhine, Director of the Parapsychology Laboratory at Duke University, entitled "Extra-Sensory Perception—What Can We Make Of It?" Dr. Rhine presented a revealing discussion of the subject giving brief descriptions of the scientific investigations currently underway at various laboratories about the country. He also discussed the various forms in which extrasensory perception could manifest itself, giving specific examples ranging from dowsing for water to rolling dice. At the conclusion of the presentation he answered as many questions as time permitted with frank and informative responses. The talk was well received by an enthusiastic audience.

A brief business meeting preceded Dr. Rhine's talk at which the following were elected officers as well as members of the executive committee for the forthcoming year: President, Major General Charles E. Loucks U.S. Army (retired),'31; Vice-president for Organizational Development, Colonel Ernest L. Osborne, U.S. Army (retired),'14; Vice-president for Membership Development, Ernest W. Reisner'30; Executive Secretary, Paul M. Robinson, Jr.,'44; Treasurer, Arthur H. Heinzman'52; Technology Review Secretary, Lieutenant John G. Beebe-Center, Jr., U.S. Coast Guard,'56; Assistant Secretary for Alumni Directory, George R. Thompson, Jr.,'53; Assistant Secretary for Alumni Records, Seldon Saunders'57; Members-at-large, C. Ford Blanchard'22, William C. Howlett'49, and Nicholas P. Stathis'29; William R. Ahrendt'41; and immediate past President, Robert W. Blake'41. For the above, with the exception of Messrs. Reisner, Thompson, Saunders, and Beebe-Center, this amounted to re-election to similar posts held on last year's executive committee.

Plans for the dinner dance originally scheduled for April 11, 1959, were cancelled on March 31, 1959, because insufficient reservations had been received as of that date. — LT. J. G. BEEBE-CENTER, JR., '56, *Review Secretary*, 3516 Lowell Street N.W., Washington, D.C.

Western Pennsylvania

On February 16, 1959, we had the privilege of hearing Dean Thomas P. Pitre speak on "Some Problems in the Distribution of Financial Aid." Very appropriately, we had guidance counselors from many of the local high schools present. On March 16, 1959, we honored the past presidents of this club; it was very fitting that we had Past President Henry Rockwood'32, meteorologist in charge, U. S. Weather Bureau, Pittsburgh, Pa., speak on recent developments in the science of weather forecasting.

This club cordially invites all Alumni in the area, either transient or permanent, to attend our meetings, which are held monthly except during the summer months in the University Club in the Oakland section of Pittsburgh. Please contact the club secretary. — STUART D. MILLER'32, *Secretary*, 3043 Dwight Avenue, Pittsburgh 16, Pa. GEORGE M. COLVILL'51, *Assistant Secretary*, R.D. #1, 84, Pa.

Women's Association

On the evening of April 15 Mr. and Mrs. Joseph J. Snyder; Mrs. Karl T. Compton; Miss Ruth L. Bean; Mrs. Anna Korda, housemother at the women's freshman dormitory; and 27 undergraduate women joined 31 of the members for a dinner meeting at the Faculty Club. Our president, Frieda Cohen, announced prizes of \$75.00 each to three outstanding members of the unusually fine group of women in the junior class. The three are Sheila Evans, Gun Hovik, and Susan Schur.

The speaker of the evening was Gladys Lyons'45, a member of the Boston Planning Board. Her topic was "The Exploding Metropolis." She spoke about

the changes that have been taking place in Boston, commenting on their good and bad points. The color slides that were an integral part of her talk were very effective illustrations. — ANNA BAILEY'54, *Corresponding Secretary*, 61 Columbia Street, Brookline 46, Mass.

CLASS NOTES

1891

The following excellent account of the life and services of Walter Hopton is taken from the printed record of Phi Beta Epsilon Corporation, October 30, 1958; and the letter from his grandson which follows it is so kind and gracious and sweet, the only desire of the members of the Class is to express deep appreciation and thanks to him personally and to the family.

"Walter Edwin Hopton died in Syracuse, N.Y., on October 20, 1958. He was 93 years old.

"A Syracuse resident for more than 50 years, Walter originally moved to the central New York area to take a position as a purchasing engineer at the Solvay Process Company. He later opened his own office as a manufacturer's sales agent and maintained the Hopton Company for some 34 years before retiring at the age of 90.

"Due to his inherent ability to recognize a need and to organize a group to meet that need, Walter is listed among the charter members of some 11 professional, social, and civic groups. Phi Beta Epsilon, the fraternity which resulted from his conviction that Tech students needed greater opportunity for literary and social endeavor, was foremost among the many organizations to which he devoted himself. With humility and pride he watched his fraternity grow upon the firm foundation he had worked untiringly to help establish.

"Organizer and president for two years of the M.I.T. Club of Central New York, charter member and president for two years of the Purchasing Agents Association of Syracuse and Central New York, organizer and president for the first two years of the Onondaga Highlands Improvement Association of Syracuse, . . . Walter sponsored and supported groups spanning a wide spectrum of interests. His activities also included membership in the American Society of Mechanical Engineers from 1891 until his death, in the Syracuse Chamber of Commerce, and in many other local organizations too numerous to mention. From 1904 until his death he served as a member of the official board of Syracuse's Forest Avenue Methodist Church."

From Walter's grandson: "Dear Mr. Brown: I am the grandson of Walter Hopton, M.I.T.'91, and for some time have been meaning to write you regarding my grandfather's life. Unfortunately, the rigors of undergraduate life at Tech, where I am currently a senior, have interfered with my intention to write sooner.

"I have enclosed a copy of an article which I wrote for the Alumni News bulletin published by our fraternity (I say 'our' because my dad and I both are brothers in the fraternity which my grandfather

founded). Walter was one of eight founders of Phi Beta Epsilon in 1890, the others including Horace Brand '91 (the only one now living), Charles Aiken '91, Lester French '91, Fred Cole '91, John Gifford Thompson '91, William Thalheimer '92, and Henry Fiske '91. My dad and I, incidentally, were named Lester Charles in honor of two of these men.

"Walter was always a loyal and devoted member of all the groups to which he belonged, and we feel that this is how he should rightfully be remembered. Please feel free to write me if you would like to know more detail about any aspect of Walter's life, as his foresightedness has equipped us with a personal autobiography. Sincerely yours, Lester C. Hopton, Jr." — WILLIAM CHANNING BROWN, *Secretary*, 36 Foster Street, Littleton, Mass.

1894

At the very time when we were looking forward to a last reunion of our Class, it is with extreme sadness that the Secretary must report the death of an outstanding fellow classman who had shared much in the thinking and plans for our meeting. George Owen, Emeritus Professor in the Department of Naval Architecture, distinguished in his profession and beloved and respected by all because of his high character, genial disposition, and high standing in all his educational, professional and social relations, died on April 21. His death came after numerous alternating periods of moderate activity and hospitalization, as the result of an incurable pathological condition. With splendid fortitude, George had through many months attended, when possible, the meetings of the Alumni Council, where he represented the Class; of Richard C. Maclaurin Lodge of Masons; and occasional other gatherings. He always attended with a commendable spirit of optimism and with characteristic cheer and friendliness, despite his knowledge that the termination of his career was not far in the future. Wherever he went he disseminated an aura of geniality and good will. His passing is therefore of intense regret to those who were his intimates through the years. He was 88 years of age, his birthday being within a few days of his death; but he had the eternal spirit of youth.

Born in Cambridge in 1871, and later living in Rhode Island, George entered the Institute from Providence in 1890. As an undergraduate he was interested in athletics and was a member of the track team. He enrolled in the Department of Mechanical Engineering, but in the junior and senior years specialized in marine engineering and naval architectural subjects, as the Department of Naval Architecture had not been officially established. However, he and a classmate, Austin Sperry, who followed the same program, became the two first naval architects trained at M.I.T. After graduation in 1894 he became apprentice and draughtsman in the Pacific Mills at Lawrence, and then was for two years assistant inspector of ordnance for the U.S. Army. He then entered the employ of the Herreshoff Manufacturing Company at Bristol, R.I., the most distinguished designers and

builders of yachts in America; and here he gained valuable experience in yacht design and construction, and in ship building in general. He next spent three years as consulting and mechanical engineer with the Hamilton Steel and Iron Company at Hamilton, Ontario; and after a year with the General Electric Company, he was engaged in professional work with the Fore River Ship Building Company. With this broad technical experience, he opened an office as a naval architect in Newton, Mass., and in the years from 1908 to 1914 designed many small boats and yachts, the most noted of which was the *Defiance*, built in 1914 as a contender in the competition for the selection of a yacht to defend the America's Cup. He also designed merchant ships and the nation's first torpedo testing ship. Owen was not only a designer of yachts, but he was a most competent skipper, and his services were much in demand in yacht racing competition.

In 1915 Owen entered a new phase in his professional life when he joined the teaching profession as assistant professor of naval architecture in the Department of that name at M.I.T. Here his experience broadened, and his students gained much from his teaching. He was very active in the promotion of sailing at M.I.T. and was the designer of most of the dinghies and other small sailing craft in the Tech fleet. He was an exacting and excellent teacher and demanded that students acquire a deep sense of the responsibilities involved in ship construction and operation. He is credited with making M.I.T., in 1935, the first college in the nation with a regular curricular and extracurricular course of instruction in sailing. The high reputation of M.I.T. in this sport is in large measure due to his ideals and influence, as is the rapid spread of dinghy sailing as a college sport.

Aside from his deep interest in his profession, Owen was closely associated with the Masonic fraternity. He was a member of Norumbega Lodge in Newton, and its master of the lodge in 1930; and he was affiliated with the Technology Richard C. Maclaurin Lodge, of which he was elected an honorary life member. He was an eloquent speaker and well known in Masonic circles. He was especially happy in his relations with the Tech chapter of the Order of DeMolay.

He was sometimes called the famous father of a famous son, as George Owen, Jr., became one of the most distinguished of Harvard athletes and is now a coach and teacher at Milton Academy. In addition to this well-known son, Owen is survived by a daughter, Mrs. Earle H. Preble, of Addison, Maine, and by four grandchildren and nine great-grandchildren. His wife is no longer living. A memorial service was held at his church, the Second Church in Newton, at which many friends gathered to honor his friendship and his memory. Our small reunion will miss this much beloved classmate who had so cheerfully looked forward to being once more among his warm friends.

The Secretary is glad to be able to give a new address for John W. Kittredge. It is 1612 Sunset Drive Northeast,

Warren, Ohio. — S. C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge 39, Mass.

1895

A detailed newspaper article has been received from Judson C. Dickerman telling about the honor bestowed upon him at a surprise party for the many years he has been singing in the Westminster Choir in Charlottesville Va.

Judson began to sing with choral groups in high school and has never lived in a city without associating himself with such a group. He was a member of the Apollo Club in Chicago, the Fortnight Glee Club in Philadelphia, a male chorus of 30 members in Richmond, and many others.

For the past 70 years, singing has been his greatest pleasure. For the past 15 years he has been a member of the Westminster Church Choir in Charlottesville, where he has an enviable record. He says he accounts for his good health and energy from the fact that he never indulged in tobacco or alcohol. He surely has had a very happy and successful musical life of 85 years. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

1896

Engineering News-Record published the following editorial "In Lieu of Flowers — It was typical of Charles E. Trout, who died April 19 at the age of 87, that his death notice in the newspapers should read 'In lieu of flowers, donations may be made to the United Engineering Center, 33 West 29th Street, New York City.'

"As a vice-president of Great Lakes Dredge and Dock Company until retirement in 1954, and as a life-long participant in civil engineering affairs, Charlie Trout was a man of stature in the profession. The venerable gentleman, who never seemed to age, had been treasurer of the American Society of Civil Engineers since 1941; and, obviously, completion of the planned United Engineering Center was a cause he carried even to his grave. Compliance with this last wish by many who will want to pay their respects to Mr. Trout's memory will hasten the day when his cherished center project will be a reality." The Class complied with this request, having been advised of it before the funeral.

The last luncheon of the M.I.T. Boston Luncheon Club was held in May at the Old Oyster House on Union Street; luncheons will be resumed in the fall on the third Thursday of the month. The New York Club continues even in the summer; Monday of the first full week of the month is for Classes '96-'09 at the Biltmore Hotel. At Alumni dinners of the last few years '96 is grouped with several classes of that era.

At the April meeting of the Alumni Council the Secretary met William E. Barbour, Jr., '33 who reported his father as well; and he promised to give him my urgent solicitation for a letter about his doings. Notice has been received from the Alumni office that Mrs. Frank Churchill died May 4, 1958. She was a special in Course V; her last residence in

our class records is Craigie Street, Cambridge. John H. Willis, formerly of Hartford has a new address; Box 508, Norwich, Conn.

An excellent picture of Paul W. Litchfield is in the May Review. At the Alumni Council meeting in March, Professor Rae quoted from Litchfield's autobiography, *Industrial Voyage*: "Harvard men used to say that Tech would turn out engineers, but that the nation would look to Harvard for the heads of business. Some of the men who were in school with me got along all right, and I got a little satisfaction out of it as Alfred P. Sloan, Class of '95, became head of General Motors; Gerard Swope, also of '95, head of General Electric, and Irénée du Pont, Class of '97, was made head of that great company. . . . Curiously enough, Sloan, Swope, du Pont, and I each became president of our respective companies about the same time."

Mrs. Harriet Merrell Latimer thoughtfully sent a letter telling of the death of her father, Irving S. Merrell, on May 10 at St. Petersburg, Fla. In the letter she wrote: "Father was active until his fall, January 10, when he suffered a broken right hip and internal injuries. Although he recovered—to sit in a wheel chair—strokes and heart attacks followed which were too severe for his strength and indomitable will." He lived at St. Petersburg since moving there from Syracuse, N.Y., in 1929. He was vice-president of the Merrell-Soule Company, manufacturers of food processing machinery, and president of the Merrell Canning Company, Harlan, Iowa. He was the inventor of many food processing machines, including the first to powder milk in 1899. He was a director of the First Trust and Deposit Company, Syracuse; trustee of Tuskegee Institute, and Voorhees Institute; a member of the board of governors of St. Petersburg Junior College; a member of St. Petersburg Yacht Club and Pass-a-Grille Yacht Club. He is survived by a son, Seward S. Merrell; two daughters, Mrs. Latimer and Mrs. John P. Welch; and a brother, O. Edward Merrell; and five grandchildren, all of Florida. The Secretary has written to Mrs. Latimer and sent a contribution as requested in the newspaper notice to the Katherine Payne Rehabilitation Center.—JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline, Mass. HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline, Mass.

1897

During the past month we have been in correspondence with Mrs. Robert S. Lunt, Mt. William Lodge, North Weare, N.H., widow of our late classmate. Their grandson, Robert S. Lunt, 3d, a student of high standing in chemistry and science, first planned to enter M.I.T. this fall; but he was delayed in making application so has decided to go to the University of New Hampshire this fall and transfer to M.I.T. later. Normally, we are informed, the Office of Student Aid at M.I.T. does not award scholarships in the first year to students coming from other colleges; so it is probable that Robert 3d will be seeking

assistance from other sources. Unfortunately, as a class we have no provision for such cases, which means that worthy students are dependent on individuals.

Our circular letter of April 13 regarding a class luncheon on June 16 brought forth such meager response that the plan will probably be abandoned. Those few who said they would attend are regularly present each year at Alumni Day functions the day before. The discussion, however, did bring forth several communications.

From Charles Currier, 49 Eliot Street, Jamaica Plain, came a suggestion showing clearly a retention of the sporting spirit: "That last paragraph of yours in the March issue of *The Technology Review* was very touching. I pictured you and Gus Lamb going to lunch somewhere near Boston Common, where afterward you would take a ride in the swan boat and Gus could sing to the frogs in the Frog Pond. Don't let him do that. Rather save his voice for our 62d reunion. Where? I suggest somewhere between Boston and New York (nearer to Boston, perhaps).

"Suggest we have more time than usual. More time to get acquainted with some we've never met before. Less 'shop' talk and some amusement such as music, games like cards, croquet, golf putting, and so forth. Wives invited. Have the class meeting during lunch or dinner. Let's play Young, 'Eat, drink, and be merry.'"

From Jere Daniell, West Franklin, N.H., April 16: "The April Review came about the same time as your letter, and I was grieved to note the item recording the passing of my class- and course-mate (XIII) Charley Stebbins in 1947. For some reason he had been out of touch with the Class for many years. I did not know even where he was living. His father was the well-known marine photographer N. L. Stebbins; and I well remember going out to the old Cape Ann trial course with the rest of Course XIII, on a tug, during the trials of the battleship *Iowa* when Mr. Stebbins took his trial photos. I was considerably seasick during most of the run!

"Not much news to relate from New Hampshire. The snow has gone from the fields but we still have large heaps on the north side of our house; and the lake in front of us is still ice-covered and bids to remain so for some weeks yet. Garden work is progressing a little. The tulip leaves are up, also the first signs of the daffodils; but no blooms as yet. A search at the edge of the woods brought to light a few arbutus buds but no blooms.

Also on April 16, George Wadleigh has much of interest in the following: "As to the last '97 man I have seen: the M.I.T. Club of New York has group luncheons monthly and last fall the group from '95 to 1912 included Ed Brainerd, who was at Dedham two years ago and contributed to the Alumni Fund last year. He was looking well, lives in Scarsdale. I tried to get him by phone this morning with no success.

"As to class news, a few days ago I had lunch with Frank G. Feeley, Jr., son of Frank the 'whiz' of Course II. You will remember that when most of us had completed the drawing of one small part of 'Jones and Lamson 2-inch by 24-inch turret lathe,' Frank had also completed assembly of the entire lathe. Frank went

with Kodak; next a sprinkler company; then was closely associated with Ed Hawkins, when he, the latter, was managing M. D. Knowlton Company of Rochester, N.Y. Frank was located at Chicago for some years.

"In 1918 when I was at St. Louis as district manager, Supply Division, Emergency Fleet Corporation, I was told to get the ablest man I knew who would work for one-third his proper compensation, to help out on World War I needs. When I asked Frank to pitch in with me, that he did, spending three days a week at St. Louis and three at Chicago on Knowlton work—nights on the train.

"Frank Jr., M.I.T.'34, looks much like his father but does not have quite the same physique. He has a great share of his father's ability and is now at the top of engineering for Olin Mathieson. His specialty is heat utilization.

"Since writing the above, I have talked with Ed Brainerd, who thinks he will not get to reunion. He reports himself as well and busy with garden and grass cutting. Hope to get him in to a group luncheon again at the M.I.T. Club.

"My last Alumni Fund appeal went into the mail to Chick Kane a few days ago. I don't know whether you will see it. It is pretty rank verse."

Fred Hunnewell, on April 25, says: "Indeed we would like to attend a class luncheon in 1959, but this is the year we plan a trip to Japan—May 14 to about the end of July covers our absence from Washington. Details of passport, and so forth, and the clearing of business matters and the like are taking quite a bit of time—sorry not to have been more prompt in this reply. If the trip really transpires, we will send a card to let you know. Trust you both are well and ready to enjoy the class celebration.

"Had a pleasant call on Henry Loomis and his wife the other day. Haven't seen Proctor Dougherty for quite a time; used to meet him occasionally going downtown."

From her daughter Mrs. Lewis R. Koller, 1237 Glenwood Boulevard, Schenectady, N.Y., we received the sad news of the death on December 13, 1958, of her mother, Mrs. Albert P. Mathews (Jessie Glyde Macrum). She was the widow of Albert Prescott Mathews'92.

As this is the last issue of the season, we wish you all a happy summer.—JOHN P. ILSLEY, *Secretary*, 26 Columbine Road, Milton 87, Mass.

1899

Some time ago I wrote to Wallace F. Goodnow, a classmate of mine in high school as well as in Tech, asking him to supply me with notes about his professional career. Evidently he intended to do so; for after his death, previously noted in *The Review*, the following notes were found by his sister, Mrs. Marjorie Jones, who is now living at Wallace's beautiful summer place at Bass River, Mass. Wallace's first work was in the state of Montana, where he represented Professor Crosby in the development of a wet cyanide process of extraction of gold from ore at the Colorado Smelter plant at Butte.

Wallace started as assistant superintendent and later became superintendent. This process, with minor mechanical changes is now used everywhere. In 1903 he came east to work for the B. F. Sturtevant Company as chief engineer of the construction and equipment of the new plant at Readville, Mass. He also supervised construction and initial operation of the Hyde Park plant. In 1908 he went to Galt, Ontario, as chief engineer of Sheldon and Sheldon, manufacturers of exhaust systems, heating and ventilating equipment, and so forth. In 1911 he became manager of the New York office of the Mathis Brothers of Chicago, contracting engineers for mechanical equipment of buildings, including the Maxwell Auto Plant, Castle, Ind.; Standard Oil plant, Bayonne, N.J.; Richmond Borough Hall, Staten Island, New York. From 1913 until World War I he was with the American Radiator Company in New York as district engineer. After war broke out he got a leave of absence and became a first lieutenant in the U.S. Army in charge of construction of the Balloon School at Lee Hall, Va. From the time of his discharge from the Army in 1922 until his retirement in 1952, Wallace was always tackling tough engineering problems for various industries. In other words he specialized in being a trouble shooter in his particular engineering field. After he retired he went to Gulfport, Fla., used his "engineering design" on a hobby kit pram, and sailed her back to his old homestead at Bass River overlooking Nantucket Sound. Sometime afterward a hurricane badly damaged the roof of his house, his boat, and his dock. But he was lucky in his inactive years, before his last long voyage, to be able to sit on the veranda, facing the sound, where he could watch the yacht races and enjoy his ocean front beautiful scenery, a solace to anyone who loved the sea as he did. Mrs. Jones, his sister, invites any classmate who is in that vicinity to call and if no one is there, to sit on the veranda and enjoy life.

Word has been received of another death on Cape Cod: Frederic B. Stearns passed way April 25 at his home in Hyannis, Mass. He was a partner in the architectural firm of Shepard and Stearns. Among the buildings he designed were the Boston Y.M.C.A., the Mark Cross Building, and several at Milton Academy.

Edwin R. Sheak of Norton Hill, N.Y., formerly of Brookline, Mass., died April 14. Services were held at Reading, Mass., on April 17. — BURT R. RICKARDS, *Secretary*, 349 West Emerson Street, Melrose 76, Mass. PERCY W. WITHERELL, *Assistant Secretary*, 84 Prince Street, Jamaica Plain 30, Mass.

1900

So few have responded favorably to the notice of a proposed reunion this year that it has been canceled. We hope that another year we may have a better response for our 60th anniversary. Our news this month seems, as usual, to be concerning those who have passed on. Wilbur W. Davis died on April 15, 1959. He was born May 20, 1877, in Spring-

vale, Maine, and attended the public schools of Malden and M.I.T. with the Class of 1900. He was an engineer with the Boston Transit Department for 45 years and participated in the planning and design of every Boston subway, including the original Tremont Street subway which was built in 1897. He was considered by many to be one of the foremost authorities in the country on the construction of tunnels and subways. He retired in 1947. He left a wife, a daughter, and a granddaughter.

Mrs. Elizabeth (Redfern) Dennett died at her home in Winchester on April 13, 1959, in her 85th year. She was born November 4, 1874, in Boston but lived in Winchester virtually all her life. After graduation from Winchester High School she entered Smith College, from which she graduated in 1897. She took several courses in biology at M.I.T. in 1898-99, being affiliated with the Class of 1900. As a young woman she taught at American College for Girls in Istanbul, Turkey, for three years and traveled extensively in the Near East and Europe. In 1906 she married Dr. Daniel C. Dennett of Winchester. Her son, Daniel C. Dennett, Jr., after graduation from Harvard, taught in the American University of Beirut; and during World War I he spent several years in diplomatic service at the American Embassy.

Our recent class letter has resulted in our receiving information of the death of several other classmates. Dr. Margaret Long of Denver, Colo., died August 29, 1957. Robert W. Strout died February 22, 1958. He had been with E. W. Bliss Company of New York for many years. Henry W. Tubbs of Gladstone, N.J., died July 22, 1958. Arthur W. Geiger died November 1, 1958. He had been a mining engineer and had lived in Montana and California. George H. Archibald died April 26, 1959. He formerly lived in Montreal, being connected with the Foundation Company of Canada. Some years ago he removed to Palm Beach, Fla. If any one has any information regarding any of these classmates that would be of interest to the rest of the Class, please send it to the Secretary for inclusion in the class notes next fall.

A number of our Class were acquainted with George Lawley, son of our classmate Fred Lawley. George attended several of our midwinter meetings with his father. He was associated with his father in the George Lawley and Son Corporation, boat builders, and later in the Frederick D. Lawley Corporation. He was the great-grandson of the George Lawley who started a yacht and boat building business in Scituate in 1865, later moving to South Boston and finally to Neponset. The four generations of Lawleys built some of the world's finest and largest pleasure craft and during the two world wars built various craft for the armed services. Fred passed away in 1953 and George died on March 20, 1959. — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 15, Mass.

1901

As these notes are written in May any account of our June reunion will appear in

the November issue. I continue with more of the 1959 class replies. Fred W. Claffin, I, of Johnstown, Pa., sends me a long account of his career from his graduation to the present time. He has had a very varied experience with railroads, mining engineering, steel companies, and so forth, being in charge of construction in many cases. From 1922 on he has been a partner in the firm of Gray and Claffin, consulting engineers. Mr. Gray passed away in 1956 and classmate Claffin has continued the practice to date.

J. P. Catlin, VI, Plainfield, N.J., is still working as president of the Viskotype Corporation, with which he has been associated for many years. He spends half his time in Florida playing while his trained group runs the business. Richard Dow, V, in Hamburg, N.Y., has just passed his 80 year mark. He is still going strong, shoveling snow and so forth. He hopes to see some of the classmates in June. He says: "One of my occupations consists of trying to convince myself that some of our national politicians are *not* crazy."

Ed Seaver, II, Duxbury, Mass., reports: "As per usual have spent the winter here in Clearwater, Fla. Milton Hogle has also spent the last seven or eight winters here, and we get together weekly for luncheon with our wives. A couple of weeks ago Phil Moore drove up with his wife and joined us at lunch at the Pelican. I am reaching that age when I can appreciate the song, 'The Old Gray Mare, She Ain't What She Used To Be.'"

Ed Fleming, III, in Los Angeles, writes: "Am in fair health and still retained as a part-time consultant by American Smelting and Refining Company, particularly relating to sulphur. It is doubtful that I will be able to attend the annual reunion in June, although I would enjoy seeing some of my classmates again."

I must have more material if you are to have any class notes in the fall. — THEODORE H. TAFT, *Secretary*, Box 124, Jaffery, N.H. WILLARD W. DOW, *Assistant Secretary*, 78 Elm Street, Cohasset Mass.

1902

I regret to have to report the death of two of our classmates, John Larrabee Jones, VI, and Arthur T. Nelson, I. Jones died in Arcadia, Calif., on April 14, 1959. He was a native of Portland, Maine, the son of Augustus C. and Sophronia Larrabee Jones, and prepared for M.I.T. in the Deering High School. He was for a long time employed by Fairbanks Morse as sales engineer. He served as an engineer officer in World War I and shortly after his return from France in 1919 had a stroke which greatly affected his health. Because of this disability he moved to Florida, where he lived for many years; but he moved to California a few years ago to be near his son, Winslow. Besides his son he is survived by his widow, the former Ethel Fisk of Portland.

Nelson died suddenly on May 4, 1959, at his home, 50 Dunster Road, Chestnut Hill, Mass. He was a native of Boston. After graduation from M.I.T. he returned for one year as an instructor and then joined the U.S. Reclamation Service in Montana as an engineer. He later became associated with Truscon — now Republic

Steel—Company in Detroit and subsequently became its west coast representative with headquarters in Seattle. In 1916 he returned to Boston to establish the Investment Realty Company. This company now owns and manages many commercial properties in Massachusetts, Connecticut, and New Hampshire.

In World War II, Nelson served in the Navy with rank of lieutenant commander. His son, Arthur T. Nelson, Jr., was killed in action in the Philippines. Surviving are his wife, Mrs. Gertrude (Lill) Nelson; two daughters, Mrs. Henry Swartz of Grosse Pointe Park, Mich., and Mrs. William Waldron of Wayland; and eight grandchildren. He also leaves a brother, Harris J. Nelson of Boston; a sister, Mrs. George S. Gildersleeve of Scarsdale, N.Y.; and a nephew, William H. Nelson of Boston.

John Marvin is enjoying a long stay in Hawaii as told in letters to Dan Patch. Attention is called to a picture of our classmate Emilio Madero in the May issue of *The Review* on page 347, central picture of the M.I.T. Fiesta in Mexico. —BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

1903

Congratulations to Howard S. Morse on rounding out another year as chairman of the board of the Indianapolis Water Company, with which he has been associated since 1925, retiring as president in 1956. Many important projects were brought to successful conclusion under his direction. One of these, a seven-mile reservoir along Cicero Creek, was named in his honor "Morse Reservoir."

Another of our classmates, Leroy Thwing of Cambridge, has invoked the poetic muse à la Chaucer as follows: "When that Aprille with hir showres swoote/The draught of March hath perced to the roote/And zephyrs blow with soft caresses/And new spring styles are in the presses/ The maydes do think on coates and dresses,/ With newsome hats and hose and shoes/ And scarves and suits and new hair-does./When then so garbed at great expense,/Then longen maydes to gon for permanents." (G. C. and L. L. T.) He writes: "I suppose my interest in Chaucer started in my teens, when my uncle sent me his copy of *Canterbury Tales*. I was intrigued by the queer language; so I was greatly impressed (later at M.I.T.) when Professor Arlo Bates read it in class. So much so, that I memorized the first few lines of the Prologue. I do not suppose that there is anything that I learned at M.I.T. that I remember in such detail as this."

Clarence and Mrs. Joyce report an enjoyable trip to California this spring. He was named as a voting delegate of the Arlington (N.J.) Music Club to the biennial convention of the National Federation of Music Clubs held April 18 to 25 in San Diego. Your Secretary's daughter, Mrs. Donald H. Rhoades, was pleased to have them call at her home in Claremont, Calif., when in that vicinity. They also contacted George Clapp in San Pedro and found him still active in civil engineering, although over 80; he is laying out a tract for a trailer park. The Joyces plan to take

off for Liverpool on the *Brittanic*, June 10. Bon Voyage!

James Welsh expects to spend the summer at Madeline Island, one of the Apostle Islands, in La Pointe, Wis. — LEROY B. GOULD, *Secretary*, 36 Oxford Road, Newton Centre 59, Mass. AUGUSTUS H. EUSTIS, *Treasurer*, 131 State Street, Boston 9, Mass.

1904

They say no news is good news, so everything is O.K. with M.I.T. '04. This is the last edition of *The Review* until fall, so we wish you all a pleasant summer. The deadline for these notes is May 15, so they contain no account of our 55th reunion. At this moment it looks like a good party. —CARLE R. HAYWARD, *President*, *Acting Secretary* and *Reunion Co-chairman*, Room 35-304, M.I.T., Cambridge 39, Mass. EUGENE H. RUSSELL, JR., *Treasurer* and *Reunion Cochairman*, 82 Devonshire Street Boston 9, Mass.

1905

So far we have been honored here by visits from two classmates. John Loughlin, II, drove up from Gloucester on April 21. Made a short call and returned the same day. Mighty loyal for an 83-year-old classmate. Ralph and Grace Hadley drove up and called on us a week later. This is not exactly a class mecca, but the latch-string is out; and we hope more classmates will drop in on us in this beautiful mountain country.

At the national meeting of the American Chemical Society held in Boston, Warren K. (Doc) Lewis was honored as a 50 year member. A society bulletin refers to Doc as the "father of chemical engineering." Through Gilbert Tower we get news of Arthur E. Russell, XIII, who retired a few years ago and moved to Florida. I quote from his letter to Gib: "I go north each summer and visit my daughter, who lives in Melrose. She has two children, who are my only grandchildren. They fly down to Florida every February. My big hobby is traveling. Here at the Motel (Paradise Motel, Miami) I play shuffleboard and cribbage quite a lot. In 1956 I took a Colpitt's trip to Europe; flew both ways. In 1955, I took a Colpitt's trip to the West Coast, traveling by train through the Canadian Rockies to Vancouver and Victoria, British Columbia, and then down the Coast as far as San Diego, stopping at Portland, San Francisco, and Los Angeles. From Miami I have visited Nassau, Havana, Jamaica, and Puerto Rico." Again I am reminded that fellows taking trips of this sort might renew acquaintances with classmates by giving me an itinerary and letting me spot the '05 men en route.

Gib Tower also furnishes us a bit of news in regard to Edward De Wolf Perry "who played the flute in the Tech '05 band." Ed died in Riverside, R.I., on March 31, 1959, at the home of his daughter, with whom he lived. —FRED W. GOLDTHWAIT, *Secretary*, Box 123, Center Sandwich, N.H. GILBERT S. TOWER, *Assistant Secretary*, 35 North Main Street, Cohasset, Mass.

1906

This July issue has a full account of Dr. Stratton's inauguration and the Alumni Day doings, but about all a class secretary can do is anticipate—in mid-May! So here's hoping that all the regulars, and a number of irregulars, were present at one or more of the events. Your President and Secretary were invited by the Corporation to represent the Class in the academic procession at the inaugural ceremonies—an honor and privilege which we appreciate. Jim had joined me at the Faculty Club on April 27 to attend the 338th Council meeting, when we heard two widely divergent talks: Professor Weiss about the signal bounced back from Venus, and Professor R. C. Wood about what's wrong with "Suburbia." Today (May 15) Jim is out with Frank Benham with their bags of sticks and little white balls.

The Traveling Hoefers are probably traveling, as Longwood Towers tells me they are away and it is rumored they are circling the globe again; the Sherman Chases may have missed A.D. as Sherm was planning an auto trip on various inspections in June. Had a note from Henry Mears early in May saying he had seen Joe Daniels (III, '05) in Seattle. Henry gets around too, although he claims to be "leading a quiet life." The climate around Portland must be congenial, as Bill Cady tells me they had only two or three inches of snow a couple of times last winter and that was soon gone; they can usually play golf through most of the winter. Bill enclosed the page from the December *Atlantic*—"Accent on Living"—wherein C. W. Morton had much to say about the wearing apparel worn by Tech students and Faculty, which brought replies in the same satirical vein from two groups of those students. Did you get a kick out of it, too? Stod Pulman wrote me at length in April—mostly personal; but he did not expect to get over for A.D.

In the April notes I reported that Percy Tillson was expecting to start a trip the middle of that month to see for himself whether the earth was round. I ventured the hope that he didn't find it was flat and fall off the rim! Well, on May 9 he was still safe. Strange thing—last night after I'd drafted these notes I got to thinking about Percy and wondered where he was. Now I'm not that psychic, but the next morning's mail brought a post card from him from Bangkok assuring me he was "still going strong and about halfway AROUND. Really very wonderful trip." Percy sent his best regards to "the old '06 gang." What did he mean—old? —EDWARD B. ROWE, *Secretary-Treasurer*, 11 Cushing Road, Wellesley Hills 81, Mass.

1907

By the time these notes are published, the 52d reunion of 1907 will have become history; and the men who were not able to be at the reunion will find a complete account of the three days we spent at Oyster Harbor in the November Review.

The spring dinner for men in the Boston district was held at the Faculty Club on Wednesday, April 29, at 6:30 P.M. Seven men and your Secretary sat around a big table; and after enjoying either a roast beef or lobster newburg dinner, we spent an hour in discussing the problems that 1907 has to solve in the way of new class officers and various phases of the forthcoming reunion. Those present were Don Robbins, Bill Coffin, Bob Rand, Harry Moody, Tom Gould, Dick Ashenden, Gilbert Small, and your Treasurer. We all felt that Don Robbins should be our class agent for the Alumni Fund, replacing Bryant Nichols. Don very graciously agreed to serve in this capacity.

The result of our canvass on having wives attend the reunion was reviewed, and the majority ruled. They will not be invited to attend this year.

A letter received in April from Don Church, manager of the Oyster Harbors Club, asked for final information on the registrations for 1907 by the 11th of May. This meant your Secretary sent out special reply postals to all the Class; and at the time of writing these notes, 20 favorable replies have been received. On these postals, news notes were requested. A summary of these follows:

A letter from Sam Marx tells of a fall he had and the resultant fracture of several ribs. This accident will prevent Sam from coming east for the reunion. John Frank does not want to come without Sam, so two of our very faithful and active members will be greatly missed at our 52d.

I wish more of the men would accept the rugged philosophy of Bebe Hosmer. He writes: "If life begins at 40, that is no reason to be in a rut at 75." Bebe will be at the reunion, Deo volente.

Carl Bragdon is celebrating his 50th wedding anniversary on June 16. A brief word from Floyd Naramore tells of his returning from a vacation of two months in Honolulu and six weeks spent in California, Arizona, and Mexico.

Otis Fales has sent his regrets for non-attendance in June, as he has to be out of the States on a business trip. Hugh Pastoriza has just returned from a three-week field trip to Europe, examining industrial plants. There are many '07 men who wish they were still able to take business trips.

John Donaldson, Course III, is living at Bethany Home, Alexandria, Minn. He is confined to bed but manages to keep up on current events and gets a great deal of enjoyment from his radio.

L. R. Davis, III, of Paso Robles, Calif., will have his daughter and three grandchildren with him this summer. Ed Marsh, XI, reports he is not physically able to come to Oyster Harbors. Bob Albrow, I, writes that illness in the family will prevent his attendance. Franklin O. Adams, IV, reports that he closed his architectural office in Tampa, Fla., two years ago and is now on the retired list.

In the May notes, reference was made to the water skiing ability of our classmate, Arthur Christensen. If he can come to the reunion, he will bring his skis and demonstrate to the Class the physical advantage of the sport of water skiing.

Ernest Miner, I, has a two-bedroom frame house in which he lives alone in Punta Gorda, Fla. He writes that he would like to find a congenial retired Tech graduate who would rent his second bedroom. He invites any '07 classmate, sightseeing in Florida, to visit him.

In the June notes, I wrote briefly of the recognition of our classmate, E. Leon Chaffee, VI, by the Institute of Radio Engineers on March 23, at which time he was awarded the I.R.E. Medal of Honor. The *Belmont [Mass.] Citizen* and also *Herald* carried accounts of Dr. Chaffee's activities since his Tech days, from which I quote:

"He then attended the Graduate School of Arts and Sciences at Harvard University, where he received the M.S. degree in physics in 1908 and the Ph.D. in physics in 1911.

"In 1910, during his doctoral research, Dr. Chaffee discovered a method of producing the first coherent continuous electrical oscillations from 1 to 100 or more megacycles and applied them to radio-telephony. For this work he was awarded the Bowdoin Prize at Harvard and the Longstretch Medal of Merit of the Franklin Institute.

"He remained on the Harvard faculty until his retirement in 1953. Appointed instructor in electrical engineering in 1911, he progressed to assistant professor of physics in 1917, associate professor in 1923, and professor in 1926. He was appointed as Rumford Professor of Physics in 1940, and Gordon McKay Professor of Applied Physics in 1946. These last two appointments were continued as emeritus professorships after retirement. . . .

"Dr. Chaffee served as vice-president of the I.R.E. in 1922. He is a fellow of the American Academy of Arts and Sciences and the American Physical Society, as well as of the I.R.E., and a member of Tau Beta Pi and Sigma Xi." — PHIL WALKER, *Secretary and Treasurer*, 18 Summit Street, Whitinsville, Mass.

1908

The final dinner meeting of the Class for the 1958-59 season was held at the M.I.T. Faculty Club, Cambridge, on Wednesday, May 6, 1959, at 6:00 P.M. The weather was perfect so we had the largest turnout of the season. The following answered the roll call: Bunny Ames, Bill Booth, Nick Carter, Fred Cole, Myron Davis, Leslie Ellis, George Freethy, Sam Hatch, Paul Norton, Henry Sewell, and Joe Wattles. We were favored with the following guests: Mesdames Ames, Davis, Ellis, Freethy, Hatch, Norton, Sewell, and Wattles.

We were able to capture a couple of tables in the corner of the Cocktail Lounge, also extra chairs, for our crowd. We were glad to see Fred Cole again and learn he is back on the job again. About 6:30 P.M. we adjourned to Private Dining Room #3 for the usual scrumptious dinner. After dinner Myron Davis showed some very fine Kodachromes he took during his and Mrs. Davis' three-month sojourn in Europe this past winter. There were views of Spain, Italy, France, Switzerland, Holland, and other places.

Leslie Ellis and Nick Carter, representing the Class, marched in the academic procession in caps and gowns at the inaugural ceremonies of Dr. Stratton as President of the Institute on the morning of Alumni Day, June 15, 1959.

Among the 76 men honored as 50-year members of the American Chemical Society at the society's 135th national meeting the week of April 5 in Boston was Everett H. Newhall, 142 Locust Street, Danvers, Mass. The following from the *World-Telegram and Sun* of New York on February 12 will be of interest: "Virginia Beach, February 12 — Funeral services are being planned today for Dr. Hardy Cross, 74, authority on structural engineering and former head of the department of civil engineering at Yale University. Dr. Cross, a resident since 1955, died yesterday after a short illness.

"Dr. Cross was noted throughout the world as the originator of new methods of structural engineering analysis. His principal achievement was the moment-distribution method of computing stress in rigid frames, known in the design field as the 'Hardy Cross method.' He received an S.B. degree in civil engineering from M.I.T. in 1908 and an M.S. degree from Harvard in 1911."

Charlie Steese is now living in Carlisle, Pa., c/o Molly Pitcher Hotel. We would be mighty glad to receive news from you fellows. Why not drop a post card once in a while? Best wishes for a pleasant summer. Our first dinner meeting of the 1959-60 season will be held at the M.I.T. Faculty Club in Cambridge, Mass., on Wednesday, November 4. Plan to be with us. — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LESLIE B. ELLIS, *Assistant Secretary*, 230 Melrose Street, Melrose 76, Mass.

1909

This is not only the last number of The Review for the present academic year, but it will not be received until nearly three weeks after our 50th reunion. Thus it hardly seems worth-while to include any items about people whom we shall meet at the reunion and get news of first hand.

Unfortunately, we have just received some obituary notices which we are presenting below.

Miss Adelaide M. Abell, VII, of 149 Prospect Street, Providence, R.I., died May 19, 1955. Howard Belknap, II, died November 27, 1956, at Wellesley, Mass. Our records tell little of his career except that he spent most of his life near Boston. In 1947 his address was given as Harwichport, Mass., the location of our 50th reunion. Notice was received from the *Sacramento Times* of the death of Hubert O. Jenkins, VII, on April 27, 1959, at Sacramento, California.

Through the 50-year fund appeal the son of Harold M. Symons, VI, notified us of his father's death on March 18, 1958. Before coming to the Institute Harold lived in Laramie, Wyo., and prepared at the University of Wyoming. At the Institute he was a member of the Tug-of-War team in his first and second years. Since leaving the Institute he lived in Cheyenne, Wyo.

In the November Review we plan to describe the 50th anniversary and reunion. We cannot close without commenting on the large amount of work which the anniversary committee has done to make the event successful. We owe much to its chairman, Francis Loud; to secretary John Davis, as well as to Henry Spencer; George Wallis; and Harry Whitaker. Both Gardiner Perry and John Willard have met with the committee and have also contributed much. Art Shaw has also done a Herculean task over the past two or three years in accumulating the 50th anniversary gift of the Class to the Institute. — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. GEORGE E. WALLIS, *Assistant Secretary*, 185 Main Street, Wenham, Mass.

1910

I have just received notice of the death of Bert Wohlgenuth on March 23. Bert had been general superintendent of the Wheeling Steel Corporation of Wheeling, W. Va.

I have also received notice of the death of Allan Chantry, Rear Admiral, U.S.N., who affiliated with our class after his graduation from the U.S. Naval Academy. The following is from the *New York World Telegram and Sun*—"Rear Admiral Allan J. Chantry, 75, who directed the design and construction of more than 1300 Navy vessels, died yesterday at Philadelphia.

"Admiral Chantry was in charge of the Philadelphia Navy Yard from 1939 to 1945. He directed the building of the battleships Wisconsin, Washington, and New Jersey; the heavy cruisers Chicago and Los Angeles; the carriers Valley Forge, Princeton, and Antietam, and hundreds of smaller ships.

"Admiral Chantry served in Washington from 1936 to 1939 as head of the design division of the Navy's bureau of ships. He was graduated from Annapolis in 1906 and received his master's degree in naval architecture at Massachusetts Institute of Technology in 1910. He graduated first in his class at M.I.T.

"He was promoted to rear admiral in 1938. Decorations include the Legion of Merit and Order of the British Empire. He retired from the Navy in 1946."

Larry Hemmenway substituted for Carroll Benton in reporting for the New York City 1910 class luncheon as follows: "In Carroll Benton's absence on a trip to Florida, I am reporting briefly on our latest regular monthly luncheon held April 22 at the New York M.I.T. Club in the Hotel Biltmore. The following were present: Gordon Holbrook, George Magee, Harold Parsons, Henry Schleicher, Jim Tripp, Raymond Jacoby, Larry Hemmenway, Fred Dewey. Also Harold Akerly of Rochester, N.Y., was there. He has been in New York City for several months in connection with the investigation of the construction program of New York City schools. He has been attending our monthly luncheons all the time he has been here, but is now finished and will return to Rochester. At least we pepped him up for attending our 50th class reunion.

"It might be interesting for you to know that as far as we can check, our class is the most regular class to hold monthly luncheons and also with the largest group. We now have around 10 every month.

"Class members are always welcome at these luncheons which are held on Wednesday of the third complete week of each month at 12:30 P.M. They are held in the rooms of the New York M.I.T. Club at the Hotel Biltmore." — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston 8, Mass.

1911

Looking over our blessings for this issue of The Review, it appears the most venerable is a post card from Marj and Leroy Fitzherbert, I, from Rapallo, Italy, via Framingham and Cornish. Pictured is the Albergo Pensione Canalli. The villa, if my guess is right, is a very stately edifice and according to my encyclopedia, Rapallo is a "seaport and winter resort of Liguria in the province of Genoa. It occupies a beautiful and well-sheltered situation on the east side of the Gulf of Rapallo." Or at least it did at the time we were graduated from Tech. All this and Spain too, according to Fitz who writes, "Have been in Europe since last fall and spent the winter in Mallorca, Spain. Very comfortable with mild climate and reasonable cost of living. After a short while longer here in Italy, we will embark for home from Venice."

John Alter, IV, writes, in a letter paying tribute to Dennie, that "Margaret was taken ill with a heart ailment in January. As there are just the two of us, no interested relatives and no help available that would do, it was a drastic change for me who never have managed the home." At the time of writing, however, Margaret had begun to show improvement.

Don Stevens had a letter from Minot Dennett, II, reporting that "Vera went to the hospital with a broken thigh bone and is still there, now considerably improved after a bad time." After paying tribute to Dennie, Minot continued, "I will send a check to Roy and also continue my support of the Alumni Fund."

To complete the sick reports, Vera MacPherson writes "Roy has been very ill—one of those 'mizbal' things flying about and he would not give up so it plain snowballed. Completely dehydrated—but I think he has turned the corner. His only sister died on Sunday and he could not attend the funeral. The money is beginning to come in for the Memorial Fund." Vera said she was writing against constant interruptions from the doorbell, nurse, telephone, and so forth, which interfered with connected thought.

Cleon Johnson, X, reporting from Wycoff, N.J., "On Sunday May 3, Lois Stevens invited a large number of neighbors and friends to an open house to celebrate the 70th birthday of Don. It was a beautiful spring day and all enjoyed the hospitality and the opportunity to extend good wishes to Don on this occasion. He was in fine fettle and mingled with the guests actively. Those who attended our 45th reunion at Snow Inn

will no doubt recall meeting Don's mother there and will be glad to know she was present at the party and was getting around at the age of 91, much more actively than some of the guests who were much younger. Even though Lois requested that there be no gifts, some people sent flowers which made the setting even more attractive. In the course of the serving of refreshments, a large decorated cake suitably inscribed was cut and served."

An announcement in the financial news lists Bob Haslam, X, among the directors of Eurofund, Inc. This new and first American fund is being organized for the purpose of providing a means through which investors may participate in an investment portfolio of European common market securities.

Also in the financial news: Aluminum Company of America has named its president, F. L. Magee, chief executive officer. He succeeds I. W. Wilson, XIV, who will remain as chairman.

Luis de Florez, II, was the subject on May 1 of Bob Considine's column, "On The Line," a copy of which was received from E. Theodore Stern. Under the heading "Fabulous Guy Retiring," the columnist says, "Down at the Anacostia Naval Station today a grateful U. S. Navy is bidding fond farewell to Rear Admiral Luis de Florez, one of the comparatively few naval reservists who ever gained flag rank.

"De Florez, whose uncle was an admiral in the Spanish navy, doesn't particularly relish the tender occasion. The dapper little flier, scientist, inventor, who served his country in both world wars and through the Korean conflict, will have to surrender his flight orders in the course of bowing out. It means that at 70 he won't be able to fly any more Navy jets.

"The Admiral, who looks 50 and moves around faster than a teenager, learned to fly in 1912 and has dedicated the intervening years to eliminating hazards from that occupation. Among his more than 200 inventions are some of the earliest known plane instruments, especially in navigation, and the seat-and-shoulder belt. . . .

"As for his own eyesight, the Admiral could pass the Navy's physical exam today. Thirty years ago, he began having trouble reading telephone books. By chance he heard of a course in eye exercise. Halfway through it he threw away his eyeglasses and has never needed specs since. We don't urge our readers to follow suit, or even to become jet pilots at 70. The Admiral is a remarkable guy, and the Navy means to tell him so today."

As these notes are being written for the final issue of the 1958-1959 volume of The Review, we are reminded that it was just one year ago that we were telling you of our first visit to Dennie at the Framingham Hospital. — ORVILLE B. DENISON, *Secretary*, 1909-1959. JOHN A. HERLIHY, *Acting Secretary*, 588 Riverside Avenue, Medford 55, Mass.

1912

Word has just been received of the death on April 16 of Joseph W. Farwell

of Mattapoisett, Mass. Joe retired to the Cape after having been associated in Boston with the engineering firm of Fay, Spofford, and Thorndike. He was born in Millis, Mass., and educated in the Canton schools, graduating in Course II of the Institute. He was a seventh degree member patron in husbandry, past member of Needham and Mattapoisett Granges, and a member of the Plymouth County Health Association. He leaves his wife Isabelle; two sons, Joseph W. of Mattapoisett and Donald P. of Sharon.

Roger W. Davis, Course X, passed away in Hartford, Conn., early in April. After leaving the Institute, he attended the Sheffield Scientific School and Yale Law School, being admitted to the bar in 1913. For many years he has been a partner in the law firm of Davis, Lee, Howard, and Wright. He was formerly a member of the Hartford Board of Aldermen and a former associate of the corporation council of the city. He was a former judge of the Windsor Town Court and a member of the Windsor Charter Committee. He leaves his wife Helen and three sons.

Word has just been received of the death of Frank Moore at Hotel Carteret, 208 West 23d Street, New York 11, N.Y. No details are available.

Jay Howard Cathar writes from Rochester, N.Y., that since his retirement from Eastman Kodak Company he has become interested in birds and has recently patented a bird feeder which he is now putting on the market. I know he would be pleased indeed to forward details to anyone interested. His device is 100 per cent squirrel-proof; will feed without waste cardinals, chickadees, nuthatches, purple finches, and so forth with sunflower seeds; and all critical troubles from sparrows and grackles are corrected. A color photograph which he sent me shows a very trim house that would be an ornament to any yard. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. C. BOLMER VAUGHAN, *Assistant Secretary*, 455 West 34th Street, New York 1, N.Y.

1914

Each reunion there have been several classmates who had planned to attend, then found unexpected events which prevented their attendance. This year has been no exception. For example, John Burdick had every intention of being with us. He and Mrs. Burdick took a trip to Florida this spring; but on his return his heart developed a very rapid rate, and his blood pressure started climbing sky-high. He is currently greatly improved, but as these notes are being written his doctor has not yet released him to attend the reunion. John has retired from Brown and Sharpe in Providence and is living in nearby Cranston.

Ralph Bates, who has been in public health work in Ceylon, has returned and had planned to be with us. He, however, has had a session with a surgeon at the National Naval Medical Center. He now is fully recovered, but at his new home in San Diego; so he, too, cannot be with us.

Arthur Shepard had fully expected to be with us. He is still employed by New

York State, and unfortunately has just received an assignment which will require him to be in the western part of New York State at the time of the reunion. Frank Dunn, whose daughter is already a graduate of Wellesley College, naturally wants to be present when his daughter receives a master's degree in economics from Trinity College. Unfortunately, the date is the same as that of our reunion.

Bill McPherrin is spending that very week end moving from Kansas City to San Mateo, Calif. He has not retired but is still very actively engaged in the life insurance business. Levi Bird Duff, who expects to be with us, writes us that his daughter is interning at the McLean Hospital — a section of the Massachusetts General Hospital. This is one of the very fine hospital training schools in this country. It deals especially with mental cases.

It is your Secretary's sad duty to report the death of two of our classmates. Strangely, both came to the Institute from the Roslindale district of Greater Boston. Frederick C. Hettinger died of a coronary thrombosis on February 1. Hettinger was a special student in Course VII, and after leaving the Institute he spent his life in Baltimore. He is survived by his wife.

Harold Duncan Shaw, always one of the active members of Course VI, died in Haworth, N.J., on May 5. He had spent practically all of his graduate life in builders' hardware manufacturing, occupying principally the position of vice-president or president of well-known companies. During World War I, he was a lieutenant (j.g.) in the Navy, serving in the European theater from December, 1917, to November, 1919. He was on destroyer duty based on Queenstown, particularly on mine duty. For nearly a year from December, 1918, he was in command of a division of submarine chasers engaged in sweeping of mine barrages. Shaw was married on April 7, 1917, to Susan Crocker who, together with a son, survives him.

This is the last issue of *The Technology Review* of this academic school year. Best wishes for a pleasant summer. Watch for the first fall issue, as it will contain a report of our 45th reunion. — C. P. FISKE, *President*, Cold Spring Farm, Bath, Maine. H. B. RICHMOND, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass. H. A. AFFEL, *Assistant Secretary*, R.F.D. 2, Oakland, Maine.

1915

What a class — 35 per cent of our mailing list has paid an average of \$6.94 for class dues. Many thanks! Many splendid letters have accompanied these checks, so here's the continuation of them alphabetically.

Thanks to Allen Abrams for correcting me on Ken King's widow. "As with your other classmates, I always enjoy reading the news notes on the 1915 group, thus keeping in touch with what they are doing. Let me call attention to the fact, though, that Edith King is the widow of Kenneth King, and not of Howard, as has been mentioned a couple of times in our notes. Incidentally, I went over to their Michigan home, shortly after Ken's death, because he was one of my close friends at Tech. Though I do get into

Boston several times a year, my time seems always taken up with Arthur D. Little business; and yet I do threaten to give you a ring one of these days. Last fall, took a trip to several South American countries in connection with one of the consulting jobs I am working on. As a result, I came back filled with the idea that I'd like to live down there if I had only started 25 or 30 years ago! With best regards to you, and I hope to be able to get to the June 15 meeting, although I can't be certain about it just at this moment."

Otto Hilbert — "Class notes indicate I missed a good party in New York. We were in Florida in February with nice weather, and then wandered through the South, stopping at Wakula Springs, Panama Beach, New Orleans (some city), New Iberia, Lafayette, Natchez, Baton Rouge, Vicksburg, and Atlanta. We both enjoyed the real South which you do not get in Florida. We are looking forward to making many short trips in this area this summer."

Hope Holway writing for Bill in Tulsa — "W. R. Holway and 'Associates (wife and two sons)' are still plugging along with power and water projects in this area. Our most active job at present moment is a new water supply for the City of Fayetteville, Ark., a very rapidly growing area. We are building a new dam on the White River, with pipeline and filter plant. Most of my time is taken up with negotiations, hearings, conferences, and board matters of the Grand River Dam Authority in relation to the second hydro-electric project (Markham Ferry) on the Grand River about 50 miles from here. This will be a \$28,000,000 project. We hope to see it started this summer under a co-ordinating agreement with the Public Service Company of Oklahoma, a private utility, with whom we will exchange power as circumstances dictate. In the distant future there is a possibility of building some pump-back installations which will be an interesting experiment for this section of the country. Tulsa is still growing rapidly and we are also engaged in a report and preliminary estimates for an extension of its water supply. This extension involves going to a new source to the northeast where the Illinois River will furnish an abundant supply for any estimated growth as we can see now.

"As you can see, the future is far busier than the present. We are enjoying a new office building, purchased two years ago, which furnishes us sufficient room for our activities. Mrs. Holway periodically threatens to resign and her working hours are shorter than they used to be, but she is still on the job. The two boys make it possible that I, more and more, work from my desk rather than from the construction site, but I can still keep up with them. Hope this brings you up to date."

Vince Maconi, another Florida visitor — "Marion and I returned from the South last week after a short five week vacation. We went to New Orleans first and then to Vero Beach. It rained during our three day stay in New Orleans and also during our drive to Florida. We managed to play golf about five days each week and needless to say our scores did not improve

much. Our family has not changed over the past year. As you probably know we have six grandchildren—Dick has four and Norman two. Lois is still with us and has a great time working in her studio. All of us are enjoying fine health and hope you and Fran are the same.”

Stanley Osborn, Hartford, Conn., gives you old grandpops something to consider—“News! My son, William, has just had his second daughter. My other son, Stanley H., Jr., has three daughters, so we have a harem of five granddaughters. Any classmate want to trade for a grandson next time? I am now waiting for my reappointment for another four year term as commissioner of health for the State of Connecticut, a position I have held since 1922.” Good luck to you, Stan. We all hope you made it.

Sam Otis, Winnetka, Ill., really has had an unusual experience in the division of his college activities and loyalties. “Outside the fact that my grandchildren are growing up, and I expect to retire from the practice of architecture next year, there isn’t much to report. Oh yes—here’s something (but I don’t think it should be published). As you may know, I attended Harvard at the same time I attended M.I.T., and last week, believe it or not, I was elected chairman of my class for the Chicago area. Ain’t that something?—for a Tech man to be chairman of his class at Harvard! Well, I guess that’s enough.”

Sol Schneider—“I hope that my mite will help to cover the expenses that are necessary to keep things going for the Class. It was good seeing you and Jac and hope to see you again sometime during the summer. The best to you and Fran, from Ann, Janet, Pam.” Bob Schmucker—“I have been retired since 1952 and am in reasonably good health. I spend the summer in Maine.” Good for Bob. Frank Scully left in April for a long trip to the West Coast where he hoped to see some of our classmates out there. Frank continues very busy with new product developments in his Scully Signal Company and hopes someday to give a demonstration at a class dinner of some of these remarkable devices.

Here’s a splendid letter from Bill Smith, listed as Rear Admiral (Civil Engineer Corps) U.S. Navy (Retired)—“For once I am getting around to responding to your periodic appeal and I am enclosing the check for class dues. You asked me to write a letter, so here is a synopsis of my life history.

“As you know, I was commissioned in the Civil Engineer Corps of the Navy, in 1917, after taking a competitive examination, and stayed in until March, 1948. I made Rear Admiral (upper half) in 1943, and decided in 1948 to exercise the privilege of retiring at my own request after 30 years service, to let some of the youngsters move up, and to try my luck in civil life. I accepted a position with Palmer and Baker as chief engineer, and shortly became vice-president as well. A couple of years ago, we reorganized as Palmer and Baker Engineers. We have expanded steadily in the past 11 years and now have nearly 400 employees, the majority of them graduate engineers. Our main office is in Mobile, where we occupy

a new 40,000 square foot building we designed for ourselves. We also have offices in New Orleans, Washington, and Guayaquil, Ecuador.

“Mrs. Smith and I will have been married 40 years next December. I have one stepson, whose married daughter is expecting this summer, so I may be 1915’s first great-grandfather. Mrs. Smith is not too well, so we live a very quiet life. My principal hobby is gardening, in which I get a lot of exercise but not much in results. However, my camellias did pretty well this winter, my azaleas are in full bloom (Mobile is a riot of color now), and my roses will be blooming in two or three weeks. Our family consists of two dachshunds—brother and sister—who own the house, exercise complete control over our lives, and are the most completely spoiled, pampered pups in existence. I do considerable traveling, both domestic and overseas, and the dogs are a tremendous comfort to Edith, even though I always have someone stay with her when I am away. One of these days I hope to get up to Boston way and see some of the boys.”

Bill Spencer—“I appreciate your little personal note on the dues letter you sent out. It was I who received the real benefit of being able to attend the 1915 dinner in New York, to meet with classmates, and renew old friendships. I was intensely pleased to see R. E. D. Waterman, whom I had not seen since shortly after World War I. We were close pals at Tech and because of his work in the Near East and Europe we had not gotten together. Each time I learned of his being in Boston I would try to contact him only to find I was too late and he had gone again. He was to give me his address after the class dinner but the discussion consumed so much time he had to rush off to pick up his wife and catch a train. If you have ‘Red’s’ address I will appreciate it if you will send it to me.

“All is about the same as usual here in Baltimore. Our three children are all married and scattered over the country raising their own families. We have seven grandchildren. Bill, the older son is a pediatrician, practicing in Richmond, Va. He is also assistant professor of pediatrics at the Medical College of Virginia, in Richmond. Dick, the younger boy, is a petroleum geologist in Corpus Christi, Texas. After working with a couple of the larger oil producing companies he became an independent geologist and is doing very well. My daughter is married to one of the officials of the Great Northern Paper Company and lives in Ridgefield, Conn. She graduated from Mary Washington College in Virginia and did medical research work during World War II, at the University of Virginia. To Ethel and me, perhaps the greatest satisfaction and feeling of success comes from seeing our children grow up to be good, upstanding citizens taking their places in their professions and communities. I am not hopeful that I can arrange to come to the Alumni Day affairs in Boston, in June, but will do so if I can. Give my best regards to all my friends and the best to you and your good wife.”

Here’s a case of class dinner bringing two old class friends together again. Ted

Spear, Rumford, Maine, wrote Ben Neal this delightful letter, from which I know these two old Course X guys will get together. “All a guy has to do to get a message out of me is to tell me where to send it. The letter you wrote from the hospital said you were leaving there in a day or so, but didn’t give any address, either home or business, for your next stop. Anyway, I’ll forgive you this time. I’m not sure what you want for a message, but I’m still circulating and active. As you probably know, I moved from the manager’s spot with the Oxford Paper Company, to public relations work for the Company in Maine. This was in 1953, and while I wondered what I would find to do, I have certainly been on the go since then. Family-wise, the picture is the same. Two daughters, and four grandchildren, who converge on the old folks from time to time and proceed to wear us down, but it’s still fun to have them around, active and healthy. Stuck up here in the woods as I have been, keeps me from seeing many of our 1915 men. I do hear directly and indirectly from Azel from time to time. I am due to retire in September, 1960, and what I will do after that I don’t know, yet. I suppose I should have plans all made right down to the last detail. At least that’s what the book says, but actually I haven’t read the book. I hope I will find something to do to keep me out of mischief, but the interesting thing hasn’t come along up to now. Best regards!”

Vern Stewart, a “long-time-no-see” winner at the New York class dinner, wrote that it was good to see us all and to be with classmates again. Do it next year, too, Vern! In the middle of March with snow and ice everywhere we got “greetings from Puerto Rico” from Bur Swain and his “associate” Joanne. They were on a cruise, which we envy—“Thanks for your good wishes on our sailing with five inches of snow on the deck. It’s been beautiful sailing weather and is now 80 degrees with a nice breeze, sun, and blue water. We go ashore by barge to St. Croix for the day. If it’s snowing up your way, we’re sorry for you.”

Speed Swift, New London, N.H.—“As for news about myself—nix—you know too much already. (My knowledge of Speed’s past should be worth a fortune, but I’d really never sell him out.) As some of you know, I entered M.I.T. in September, 1908, and after a year’s absence and several faculty votes but never a ‘vote 10,’ I ended up in the Class of 1915. No regrets. I am enclosing a newspaper clipping about your own Jack Dalton.” This was a piece from the “Country Correspondence Column” of the *Boston Herald*, March 22, in which Mrs. Marshall B. Dalton reprimands the columnist for his cold breakfasts but commends him kindly on his dishwashing, especially as her husband (our own Jack) is immune to this indoor sport. I’ll add, Jack and many more of us, eh! We’re glad Swifty ended up in our Class.

Ralph Waterman, another “long-time-no-see” winner, wrote while wintering at Sea Island, Ga.—“It was a pleasure indeed to be with you and the 30 odd others of 1915 at the Chemists Club on January 30, after these many years of

being away and out of touch, I thoroughly enjoyed seeing you again. If at all possible I'll try to attend your reunion on Alumni Day." We all missed Charles Williams and his loud if non-musical singing at our New York dinner. Always a regular, charming and popular attendant, Charlie left us worried with this letter to Ben Neal. I quote, "Thanks for your nice letter. I'd had a coronary thrombosis on Thanksgiving Day, while visiting Mazie's daughter in Boston, and wasn't let out in time for the class dinner in New York. However, it seems to have been a mild one for I'm feeling fine again and doing about everything and my doctor says I'm coming along very well."

Then, in answer to my letter, Charlie wrote about his unfortunate experience. We are all glad he's better and hope he stays healthy to lead the music next year. "Thanks for your nice note. It would have been good to see you and if I had thought of it I'd have had Mazie get hold of you, but to tell the truth I was so mad at myself at getting sick in Boston and so anxious to get out of there I didn't think of anything else. I must say a very good word for Mass. General Hospital and Boston's doctors and nurses. They gave me wonderful care and shipped me home a week before Christmas, which was a lot better than my New York friends would have done. You'll note I do not say 'pretty nurses.' Anyway I'm feeling fine again and have just gone through the fun of helping Mazie's 88-year-old mother buy a new house and move into it. If she can take it, why can't I? I was very sorry to miss the dinner, though I resent any reflections on my singing. Hope for more appreciation next year. Best to you and Fran."

Chris Wolfe — "Here are a few pennies to keep the Class rolling. I hope you and Fran stay well and happy as the Class needs you to keep it running." Thanks, Chris, for those kind words. Ray Walcott — "While I am pleased to hear from you, any time, the 'My dear Classmate' approach raises the expected resistance. This is not the reason for the delayed response, but lacking a better excuse, could have been. So there! I have been ringing doorbells the past three weeks, but only weekends, and with weak results — a few cards from the 'Every-member' canvass, personal contact tactic, recommended by the Regional Solicitation Program, Solicitor's Manual, 1959, M.I.T. Alumni Fund. As the 'foreman' stated, you do get to meet some nice people. I never was, never could be a salesman. But the people are nice! So, for a less worthy cause why should I give to you? Only because you sent a return envelope, 'postage paid'? That is why. I have been back in Toronto, Kitchener, and Hamilton, on business for Stauffer's Canadian agents! Sure, I am retired, but some kind friend thought I would enjoy a fast round of calls on the rubber companies, with the fine young salesmen who work up there. I did!"

The November column will open with a detailed account of our class cocktail party on Alumni Day which Barbara Thomas and Al Sampson are putting on for us. To you all who have so kindly

and loyally "helped Azel" with class dues, contributions to Ben Neal's 50th Fund and letters for these notes — many thanks, many blessings. Here endeth the column for this year. — AZEL W. MACK, Secretary, 100 Memorial Drive, Cambridge 42, Mass.

1916

Jim Evans reports a busy monthly 1916 luncheon at the M.I.T. Club in New York, in May. Those present included Joe Barker, Steve Brophy, Bob Burnap, Art Caldwell, Aime Cousineau from Montreal, Jim Evans, Charlie McCarthy, Herb Medelson, and Len Stone. Luncheon turned into a talkathon which lasted far into the afternoon. Charlie McCarthy was flying to England two days later and according to Jim, had three objectives: 1) an aviation meeting in London where he was going to make a speech, 2) three weeks' holiday with "Mrs. Charlie," and 3) the International Aviation Exposition in Paris.

Steve Brophy recently sent us a 1936 prereunion Nineteen Sixteen News telling of the wonders to be at the forthcoming 20th reunion being held at the Riversea Inn, Saybrook, Conn. Steve was chairman and Hovey Freeman was treasurer of the 20th Anniversary reunion committee, which included Bill Farthing, Henry Shepard, Sandy Claussen, Ralph Fletcher, Chuck Loomis, and Jack Burbank. Note who was responsible for what: Steve Whitney, entertainment; Bill Farthing, refreshments; Henry Shepard, golf; Charlie McCarthy, tennis! Hovey Freeman, horseshoes; Jack Burbank, baseball; Ralph Fletcher, skeet; and Duke Wellington, sailing. It's interesting to note the regional chairmen: Pacific Coast, Flipp Fleming; Mountain States, George Repetti; Texas, Kem Dean; Midwest, Chuck Loomis; Michigan and Ohio, Phil Baker; Pennsylvania, Francis Foote; South Atlantic, Clint Carpenter; New Jersey, Jim Evans; New York City, Bill Farthing; upper New York state, Don Webster; Delaware and Maryland, Paul Thomas; Connecticut, Jack Burbank; Massachusetts, A to F, Steve Berke; G to M, E. L. Kaula; O to W, Henry Shepard; Rhode Island, Hovey Freeman; Maine, New Hampshire, and Vermont, Rusty White; Canada, George Hale.

In April, Joel Connolly tells of seeing the youth rally in Taipei (Formosa) pictured in the Sunday *New York Times*. "We had a Rotary Club intercity forum nearby at the time and I saw the youth rally on my way to the forum. There, we had representatives of the 12 Rotary Clubs in Formosa and 4 Rotary Clubs in Hong Kong and Kowloon and one in Macao. I am a member of the board of directors of the Taipei Rotary Club this year, and have taken an active part in its work. Among other things I'm chairman of one of the four principal committees, the vocational service committee."

Howard and Alice Hands of Wellesley Hills paid that "long intended" visit to your Secretary and wife in April. They get down to New Jersey every now and then to visit their son and family who live about 15 miles away in Wayne. How-

ard is looking forward to retirement later this year, to be able to go back to Florida and bask in the sun through the winter months and to stay in their camp in New Hampshire during the summer months.

Wes Blank notes that the request for news finds him partially and peacefully retired on his farm "Wes-Mar" of 160 acres in Charlottesville, Va. Has about 25 cows and 20 calves in the pasture, which a farmer cares for. However, he indicates that the University of Virginia hauled him out of the files, and for two years he's been special lecturer in Civil Engineering. This he's enjoying after 40 years of practical outside engineering. It includes courses in statics, strength of materials, and stress analysis as well as a senior project of a practical civic nature. Wes writes: "My family consists of my wife, son (materials engineer with J. A. Jones Company, Charlotte, N.C.), my daughter (in Tennessee), and five grandchildren. Our interests are with their future and within our community, the University, Presbyterian (Westminster) Church, and the Farmington Country Club. We find the climate here less rugged than in New England and the people very friendly. My special hobby is playing the Hammond organ, a large, church-size (my second) one which is installed in my house. My wife's hobby is 'hook rugs' and to date she has made about 70 and still has her frame set up in the studio, a wing of our house. Although our health is fairly good, Mrs. Blank does not travel far even by auto, and our children keep our sights and trips mostly southern. It is questionable therefore whether we will make the class reunion this year."

A letter from Dina Coleman reads, in part: "Personally, there is very little to tell. The more I try to get out of business the deeper I get into it. Until my wife gets well, there is little else to do because, except for reunions, I do not enjoy going about without her. In the goat feather gathering department, I am still on the county school board, and we are faced with an increase of over 50 per cent in school population, and no money either to build schools or to pay the additional teachers to staff them. At Transylvania College we are raising faculty salaries and stiffening the entrance requirements, thus lowering for a while only, we hope, the numbers admitted. As chairman of the finance committee, I shall have to dig up the deficit every year, from all and sundry. To urge me to superhuman efforts in this endeavor, I suppose, they are awarding me an honorary LL.D., June 15. Honey! Call me Doctor!" We sure will, Dina, we sure will! And congratulations from the Class of 1916, to you!!

Word has come in from one of our course VI boys who hasn't been in the column for a long time — Ralph Spengler. In writing he asked about Donald Woodbridge, but we had to report regretfully that the records showed Don had died quite a number of years ago. Ralph has been a consulting engineer for many years but has been forced to retire. As he puts it: "My endeavors have now been curtailed by my doctor, so with the help of the little white pills I have re-

tired from consulting. Our daughter lives in Wellesley Hills. Her husband is on the faculty of Babson Institute. They have four children (three sons and a daughter), and we think they are the finest. We get to see them all too infrequently and hope someday to live near them."

Arvin Page, acting as a sort of traveling secretary on an auto trip to the West Coast, sent in his first report (in very neat descriptive-geometry-type hand lettering — maybe it's his regular handwriting) from Arizona, on April 18, while the Grand Canyon was having a snow storm. Having retired, he and Claire started from Winston-Salem, on April 1, for the longest trip they have ever made. Arvin said that unfortunately they had not been among those who have "engineered" trans-Atlantic, trans-Pacific or around-the-world navigations for business purposes. Not that he hadn't tried — but he admits he's no salesman. They drove down through Georgia to the Gulf coast to Panama City, Fla., and along the coast to New Orleans. This was the first time they had been in this vicinity at that time of year, and they recommend it heartily! In previous years they had visited Charleston, S.C., during the Easter holidays (he has enjoyed Easter Monday as a holiday for 36 years!) and have been intrigued with the wealth of azalea blooms, but he says these can't hold a candle to southern Georgia, northern Florida, and southern Mississippi. The masses of color are beyond description. Says he: "It was simply gorgeous and I recommend that you take the time to see it for yourself soon, stopping off of course in Winston-Salem on the way. We found New Orleans interesting. We were there on a Sunday so we were able to roam around rather freely without too much traffic."

"After leaving New Orleans we went to Natchez, Miss. If your wife is a member of a garden club she will want to go there. Avoid it if you can, I couldn't. All they are after is the tourist's dollar. A visit to one home is quite enough. We then set out across Texas. I will admit it is big but I could see nothing else to brag about unless one is fortunate enough to own a few oil wells. We purposely avoided Dallas and Fort Worth but did stop in Lubbock to see Jimmy Murchough. As you probably know, he is head of the civil engineering department at Texas Tech. He told me he was the first one of the faculty to be employed when the college was started 34 years ago and he hopes to continue teaching for another five or more years. He has put on a few pounds at the waist line as most of us have and has lost a fairly large percentage of the hair he once had. Otherwise he looks much the same as he did in 1916 when he takes off his trifocals. As well as I could determine his chief avocation is teaching his grandson how to play baseball, and I understand he has been quite successful. Incidentally, Jimmy gave my vanity a terrific jolt as he remembered me as 'that bowlegged guy who ran on the class relay team.' Ain't that something?" Arvin was then headed for Las Vegas and the Pacific Ocean. He noted with regret that he had played golf only twice so far — green fees of \$10 with caddy fees of \$3.50 plus tip were rather discouraging.

We have an April 20, 1959, bulletin from the Grace Episcopal Church of Merchantville, N.J., showing a sketch of a beautiful church, and listing the name of the rector followed by the name of the associate, none other than "Reverend Edward A. Weissbach, B.S." Our June, 1957, column mentioned that Ed had been ordained to the priesthood of the Episcopal Church. His wife had a second stroke in February so that when he wrote he was doing much of the work around the house. He says: "I still manage to do my work at church on Sundays — since I am a 'retired' assistant this is not too difficult. I get on surprisingly well with day help to clean the house and with my wonderful friends and neighbors. I preach one Sunday in the month and do parochial visiting as I can, so nothing is done to put my Social Security standing in peril."

Ed says he is glad he and his wife managed to get in another trip abroad last September and October. They took the *Berlin* to Bremerhaven, a 10-day journey via north Scotland. Rented a car on the Continent, and even though it broke down four times — once on the Autobahn and once in Austria — they got around and did small towns that they normally would not have touched. He says for the record, that their car was not a Volkswagen nor an Opel, but that they were so impressed with the Opel that they got one here in the States after they got home. Then: "We had a surprise visit from Spencer and Mrs. Hopkins last week — they were on their way to New York to take a cruise to the Caribbean. Spencer retired last year, no, in 1957, from General Motors. He says it was not a retirement but a 'graduation.' Fred Spencer, who was with the Radio Corporation of America plant in Camden, has also retired. He is living somewhere in the vicinity of Boston. He had built a nice home in Moorestown, N.J., some years ago. As for us, I think we shall stay here in Jersey — no sales tax, and we are close to New York and Washington, not to mention Boston and way points. The only section that I thought we might like better is Colorado, but I cannot seem to sell the rest of the family on moving there. And so with enough work in my new vocation to keep me busy, here we stay with possible trips to the shore for the summer."

Val Ellicott reports that he and his wife are going on a two months' pleasure trip to Europe starting May 29. Val, who has degrees of S.B. (Course VII at M.I.T.), M.D., and Ph.D., is chief of the Bureau of Medical Services and Hospitals, Maryland State Department of Health. Recently he has been working hard to get better nursing home care in Maryland. A February 1959 bulletin of the Maryland State Board of Health gives a paper by Val under the title, "Nursing Home Plan Revised — A Solution to the Problem."

Phil Baker reported that he was fearful he just wouldn't be able to get to Boston and the reunion, but made a big contribution to what he calls the "remarkable class notes" by forwarding an article from the April, 1959, *Michigan State Bar Journal*; the article, "An American Law

Professor Visits the Soviet Union"; the author, none other than our E. Blythe Stason (remember? Course VI, Electrical Engineering). At the head of the article is a good picture of Blythe alongside the caption, "This picture of Dean Stason was taken on July 3, 1958, from the parapet of the 25th floor of the University of Moscow." He also appears in a second picture which carries the caption, "Dean Stason joins a discussion group in the council chamber of the University of Kiev. Surrounding the author are the rector and members of the faculty. Picture taken July 9, 1958." Some idea of his activities during the busy summer of 1958 is given in some editorial notes that accompany the article. These will make interesting reading to classmates: "To the bar of Michigan, Edwin Blythe Stason needs no introduction. Dean of one of the nation's great law schools, he also is known widely from one end of the country to the other."

"The Dean's 1958 summer schedule was a strenuous, yet highly interesting one, and followed this pattern: 1) June 22 to July 14; in the Soviet Union with a delegation of special consultants sent by the U.S. Department of State. 2) July 22 to July 26; in Cologne, Germany. Attending meetings of the International Bar Association, and in charge of the sessions devoted to atomic energy law. Representatives from 13 different countries were assembled to discuss questions of tort liability for radiation injuries. 3) August 14 to August 26; back in the U.S. attending the annual meeting of the National Conference of Commissioners on Uniform State Laws. Addressed the Conference of Chief Justices in Pasadena on the subject of legal liability for radiation injuries. Addressed the section of insurance law of the American Bar Association on the same subject. 4) August 31 to September 8; Geneva, Switzerland. Member of the U.S. delegation to the 2d International Conference on the Peaceful Uses of Atomic Energy. Read a paper on 'A Comparative Study of Tort Liability for Radiation Injuries.' 5) As a trustee of the Power Reactor Development Company (building the Fermi plant at Monroe, Mich.) he accompanied a group of other trustees on visits to atomic installations in France, Belgium, England, and Switzerland."

"Upon his return to Ann Arbor, Dean Stason was invited to prepare a story on his visit to Russia, published here for the reading pleasure of members of the bar." The article itself is extremely interesting reading and we feel sure that Blythe would be pleased to send a reprint copy to any '16 man who writes to him at the University of Michigan, Ann Arbor, Mich."

Herb Gilkey says our March 1 appeal for "just something" arrived as he returned from a 10-day sojourn "in a smogless Los Angeles (believe it or not)." When he wrote in April, he was planning a trip of a few days to inspect several of the large Army Engineers Missouri River basin dams. Between interesting digressions of this sort during his fourth year since administrative retirement (Iowa State College, Ames), he continues to teach full time for nine months and likes

it. He's former head of the Department of Theoretical and Applied Mechanics at Iowa State. He does some writing too, the latest off the press being a fourth edition of *Urquhart's Civil Engineering Handbook* (McGraw-Hill), in which for the last two editions he has authored the section on concrete. He has had some pleasant surprises — honors, recognitions, and so forth — in recent years. The latest is an honorary membership in the American Concrete Institute, conferred early this year, in recognition of outstanding service in the field of concrete and in the work of A.C.I. (of which he is a past president). Congratulations again, Herb! His message includes some words of wisdom, "As we elderly upstarts endeavor to adjust ourselves to the late 60's and upwards (he means age 60, not the 1960's), I'm convinced that it becomes more than ever incumbent upon us to keep ourselves satisfyingly occupied. For me it's better to be *zestful* than *restful*; to bite off too much, perhaps, rather than permit myself to acquire a 'caught-up' (and therefore a 'fed-up') feeling."

Allen Pettee sounds wedded to his retirement location in Tryon, N.C. Makes everything sound so good one is led to believe that there are three places to retire to — not merely California and Florida, but California, Florida and North Carolina. He says Tryon is so secluded it is hard to lasso and hog-tie a classmate. "About a year ago, Gene Barney and his wife spent a couple of days with us, which was a welcome breeze from Charlesbank. That is all except one or two contacts made during fund raising. Consulting? No. Administering an engineering background for sales correspondence course for my old company salesmen? Yes. This helps to keep me out of mischief and keeps my own engineering background fresh. Writing texts and correcting papers — you know the picture. Making my wilderness blossom like a rose consumes much time. Some of the old boys here specialize on camellias and azaleas, but I am currently wet-nursing about 30 of Jackson and Perkins' best roses. They seem to flourish mightily here and are very rewarding. The first blooms will open up any day now (April 24), and we can hardly wait. Politics was (or were) never my meat, but I had a bit of fun last fall in organizing Tryon precinct for the Republicans for the state and county elections. We were soundly walloped but the traditional opposition noticed us. Now to get ready for the 1960 battle!"

As for vital statistics Allen says he has two married daughters who have provided only boys, the last having arrived in February, making a total of five. Whether this means that nature is taking a hand in producing more scientists, he can't say — "In the earlier days they might have been thought of as combat replacements. Remember that old theory?" For fillers and to turn a fresh page, Allen and his wife manage an occasional trip. At the time of writing they had just returned from visiting the "gorgeous gardens" around Charleston, S.C., and Wilmington, N.C., winding up with an inspection of the restored palace of Governor Tryon, North Carolina's first royal governor at New

Bern, N.C. He says: "To us tar-heels at least, it is as good as anything at Williamsburg."

With the announcement that your Secretary's fourth grandchild, Anne Elizabeth Dodge, arrived on May 10, this concludes the column for the 1958-59 stretch. A warm note of appreciation is expressed to the many members of the Class who have heeded the call for column material when the call has gone out. Just keep the information rolling in during the summer months to help keep the column full again starting next November. We'll then have a full report of our 43d reunion at Chatham Bars Inn, Chatham (Cape Cod). Have a good summer and write, on the slightest provocation, to HAROLD F. DODGE, *Secretary*, 96 Briarcliff Road, Mountain Lakes, N.J.

1917

These notes are being prepared in the middle of May for the last issue of *The Review* in July. In the meantime, all those whose 65th birthday arrives before November of this year, please deluge the class secretary's desk with information about your "change in life," if any. Remember, the notes for November go to press on September 15.

Ed Grayson writes: "Shortly after the attack on Pearl Harbor a commission in the Ordnance Corps of the Army was offered, and I became associated with shell and bomb loading plants. When V.J. Day occurred, I was back on duty in the Pentagon. In the spring of 1946, I was ordered to temporary duty in command of Redstone Arsenal. This job was supposed to last for two weeks, but three and one-half years intervened before the city of Washington saw me again. After eight months in command at Nebraska Ordnance Plant, orders sent me to Japan, then to Guam. For the Army, at that time the island of Guam was strictly a have-not post. In two months, I was detailed on temporary duty to Manila to represent the Marianas-Bonins Command (Guam), under General MacArthur's orders, in obtaining surplus military items which had been accumulated in the Philippines for the invasion of the Japanese Islands, an operation that was rendered unnecessary by the dropping of two atom bombs.

"The temporary duty in the Philippines fortunately lasted for 19 months, eventually enabling my wife to join me. A wonderful experience to us was a trip to Hong Kong and Bangkok on leave. If any place in the world resembles Bangkok, it may be Saigon. The temples are fabulous. Bangkok is somewhat of a headquarters for luggage and other leather goods, and for the type of jewelry called niello ware, which appears to be silver engraved against a black enamel background. Presently I am a contract specialist for the St. Louis Ordnance District of the U. S. Army. It is interesting to know that items connected with the missile program are being procured here."

In connection with the grandchild contest — started by Stan Dunning — word has been received from Alvah (Peezo) Moody that in spite of his 12 grandchildren, he concedes that Ralph Ross is the champion with 17 grandchildren to his credit. Peezo

stops moving natural gas to Chicago from Arkansas next October 1, when he retires. He plans on going back to Denver and doing part-time work to keep from getting bored. He expects to do some traveling and get back to New England once in a while. Peezo has a good reunion record, so he had better put down June '62 for the 45th.

Baldy Sawyer advises us that there will be "no changes in my way of living after July 15 [his 65th]. I feel blessed with very good health and trust that I shall have many interesting years in which to utilize the educational gifts received from Yale and M.I.T."

A newspaper clipping from Springfield, Mass., on March 20 reads as follows: "George L. Roy, Treasurer of the J. G. Roy and Sons Company, building contractor, was appointed by Mayor O'Connor to succeed his brother, the late J. Ernest Roy, on the Building Standards Committee. Roy is a director of the Building Trades Employers Association and is chairman of the health and welfare fund board of the Bricklayers, Masons, and Plasterers International Union. Roy is married and the father of three children."

We have been advised that Paul Bertelsen has joined the Small Business Administration in Washington, D.C.

Since notes are scarce, we'll close the 1958-59 volume of class news with a little poem about Boston and two jokes. The poem reads: "The home of the bean and the cod is here,/Also the road route of Paul Revere,/ The harbor where everyone threw away tea,/A snug little city close by the blue sea./Here's culture, here's art, Here's blood that is blue,/(O'Briens and Cohens and Andersons too!)/The best in refinement, the nicest of habits,/The Lowells, the Saltonstalls, Bacons, and Cabots./Historic old Boston has streets to get lost on. Here the bright banner of freedom unfurled. Pedantic, romantic, Right on the Atlantic./Is little old Boston, the Hub of the World!"

Since spring is at its height perhaps this one is in order: "She was only the gardener's daughter, but she sure knew where to plant her tulips." And another which is timely: "The minister's sermon will be 'How Can We Deal With the World Crisis?' Following the sermon Mrs. Jones will sing 'Search Me, Oh God.'" — W. I. MCNEILL, *Secretary*, 107 Wood Pond Road, West Hartford 7, Conn. STANLEY C. DUNNING, *Assistant Secretary*, 21 Washington Avenue, Cambridge 40, Mass.

1918

The civil engineer, adjusting his sights to pitiless fact in the process of plotting the bosom contours of his mother earth, always establishes a datum level by which to record the pretty curves. Similarly, we all establish some solid bench marks along our ways of life. Like the rest of us, George Washington Thomas laid down one such datum point when he got a degree in civil engineering at M.I.T. He established another when he went to work for the Hood Rubber Company, Watertown, Mass., in 1922. He soon became superintendent of calendering. In 1942 the next level on which he could be sighted was superintendent of Calendering, Cut-

ting, Cement Spreading, and Varnishing. That title seemed a little heavy, so he hopped up another level in 1951 to assistant divisional superintendent of Heavy Goods. The atmosphere was more rarefied now and the contours enclosed fewer people, so in 1952 he became divisional superintendent of Heavy Goods. Also somewhere along the line Hood had become a subsidiary of B. F. Goodrich. Still the contours rise. In 1957 he was given supervision of all light and heavy footwear. This spring, up again, he was promoted to superintendent of Manufacturing Services. There have been other bench marks too, again seven in all, of whom two are now attending college.

John West Kilduff (no kin of Shakespeare's "Lay on, Macduff. And damned be him that first cries 'Hold, enough.'") started off as a sanitary engineer. He refuses to say whether he felt a compulsion to get his bench marks away from any sewer surveys. Anyway, to see him at the present time train your transit on the Amesbury (Mass.) Metal Products Company. Johnny is the engineer who has to do with a fascinating variety of things. He makes stainless steel seamless boxes in which to raise laboratory mice under completely sanitary conditions for cancer research. These are used all over the world, especially by such well-known medical research centers as Bar Harbor, Maine. He makes 50,000,000 candlepower lights for landing fields, capable of flashing for a five-thousandth of a second at intervals a fiftieth of a second apart in order not to blind the pilot. These can be seen for 50 miles and are quite good in fog (assembly by Sylvania). Johnny is now class president.

Hall Nichols had himself an intellectual bench mark at Harvard before coming down river for two years. He was appointed during Christian Herter's governorship to be director of Building Construction for Massachusetts. This involves all buildings erected by the state and has its problems, too, because of the ever-present conflicting views and divergent wishes of the various political powers which sight in their transits on any state job. This is the inherent frustration which any career public servant must learn to live with. Nichols charges me to quote his opinion that the time has long since passed when an engineer can be adequately trained in four years. He says it takes a lawyer, or a doctor, or a clergyman seven years, and no one of them has any more to learn than an engineer. He also says that the best course he had in M.I.T. was precision of measurements. He uses it every day. (Harry Goodwin please note.) He has four children and 10 grandchildren and declares that all his work has been interesting.

Incidentally, referring to an uncertainty about the Rossmans in last month's commentary, Al's lapidary bench is presently postmarked Paris, Maine. Alan Bridgman Sanger started his bench marks from the surface down as an adventurous mining engineer. But it was not steady work, so he changed his topography to a high office building in New York from which to conduct an advertising business. Instead of measuring things by plain table he does

it by figures on an annual report. These have been going up, and so has he. As a matter of fact the new offices of Sanger-Funnell, Inc., are on the terrace floor of 355 Lexington Avenue, which is one of those new buildings with a lot of glass. Good climbing, Alan, but my garage is higher than the top of the Empire State Building by over a hundred feet. Yes, we received from the Alumni Office some newspaper clippings that speeches had been made here and there by F. ALEXANDER MAGOUN, *Secretary*, Jaffrey Center, N.H.

1919

Well, the 40th will have come and gone when you read this, and I hope that you were all there and all had the best time ever!

Lots of cards about attendance arrived too late for inclusion in the June issue of *The Review*, but we want to mention everyone who was good enough to send his card in, and a special thank you to the boys who went out of their way to exhort others to attend the 40th. Such a one is Arklay Richards, who worked hard on getting out as many '19 men as he could for our get-together. He included lots of news notes in his letter to us, too. Ark's son Whitman, M.I.T.'53, is running Ark's old thermocouple plant for him now as of early '58; and Ark is "busy having a hey-day goofing off a lot." He tells us that he spent three months in Europe and two months in California during 1958. His other son Lincoln is with him now also; after a two-year stretch in the U. S. Army in Germany he brought back a darling Austrian bride, Ark said. Ark was afraid that his wife couldn't get to the reunion as she was likely again this year to be on the Sears Tennis Cup Team, which was to play at Wilmington, Del., on our reunion weekend.

Among those he contacted were: Conrad Hedin, who planned to attend the reunion. Conrad is retired now; he sold his furniture business five years ago, and is a granddaddy now with three granddaughters. His particular recreation now is boating with his son-in-law at Marblehead.

Of Roscoe Hysom, Ark wrote; "He will certainly be at the reunion part of the time. He still sells shovels and cranes to contractors and is partner in the Boston office of Hedge and Mattheis." Eugene Mirabelli, Ark said, is teaching structural engineering in Course I, mostly buildings, bridges, towers. Ark added, "He's involved in commencement. Expects to come to reunion part time."

Harold Moberg is still in the Badger Chemical Division of Stone and Webster, estimating chemical and power plants. Harold took a trip to California last summer and, said Ark, "is certainly coming to the reunion." Jake Lichter wrote that he'd be there, as did Paul Sheeline, and Harold Marshall (who is fast becoming the perennial mayor of Palmyra N.J.). Harold said he would like to drive his 1919 Cadillac to the reunion but that the trip would probably be too much for his wife that way.

Roy Burbank wrote that he hoped to make it for at least Saturday afternoon

and evening June 13. We hope that he was able to do it. He mentioned something else, too: the 1919 gift to M.I.T. to which he made a fine contribution, as did many others. We hope that you contributed, too, to the limit of your ability to do so!

Herman Herzog wrote that he wasn't sure whether he could make it. And he gave us his new address: c/o Jack Weiller and Company, 549 West Washington Street, Chicago, Ill. Ralph Gilbert wasn't sure either, but was hoping! Walter Hall wrote that he hoped we would all have a wonderful time, but he could not be with us. Maybe next time!

Morse Lloyd was very sorry not to be with us, but said that his wife was off on a trip to Europe to visit the children and grandchildren whom she hadn't seen for a long, long time; and Morse was pegged down at home looking after things, including their good old 16 and one-half year old dog. Sorry not to have you with us, Morse. Lou Grayson said that it was a great disappointment to him not being able to attend the 40th, as he had expected to be there. However, he had to be away with the family on a trip at that time — Jasper National Park and Alaska this year. He closed his letter with: "I surely would like to see the old crowd again. All good wishes to everyone." (Sorry, too, Lou.)

Buzz de Lima, always on the hop as the prexy of the Roger Smith hotel chain, wrote a nice letter regretting that he was scheduled to be in the West at the time of the reunion and was "sorry to miss the fun." He added; "I am particularly sorry to miss being with you and all the good people we used to know in the old days, but shall be thinking of you all. Warm regards!" Larry Riegel wrote that he would have liked to attend but "unfortunately I will be in Europe at the time." Better luck next time, Larry!

Frank Reynolds was to be in Hawaii at the time of the reunion. His news notes included the follow: "Still driving away as director of research for Bird and Son, Inc. Also active in the Building Research Institute affiliated with the National Academy of Science. Am on its board of governors and chairman of its programs committee. These activities, together with 12 grandchildren scattered around the country in Massachusetts, Connecticut, Delaware, and California, keep Mrs. R. and me reasonably busy."

Dean Webster, in Europe at the time of the reunion, wrote that he was deeply sorry not to be with us. Roderic Bent was very much disappointed to miss the reunion. For some unknown reason the "Market" at the Furniture Mart in Chicago was set a week early this year and spoiled Rod's plans to be at Wentworth-by-the-Sea. Jim Hawkes wrote from Balboa: "Sure am pleased to hear from my old classmates. Thanks for writing. Am sorry that I can't be with you for the reunion." We were sorry, too, Jim.

Margaret Pierson Olfene in sending her regrets also wrote: "Hope to return to work as a social worker at Tewksbury this week, although on crutches from a broken hip suffered this year from a quick fall on the ice." Sorry you couldn't be with us, and we all hope you are feeling fine now!

A card from Uhachi Nabeshima in Tokyo said: "For me the Pacific is too vast a stretch to go across." Send us more news notes, Uhachi; we'd like to hear from you again. George Irwin, writing from Delray Beach, Fla., said: "Probably cannot get north in time. Sorry." Robert Bolan sent us his new address: Route 1, Box 282F, Sarasota, Fla., and said that he was sorry he couldn't make it to the 40th. Also cards from J. F. Lavagnino and F. E. Markus, who could not get to the reunion.

We want to remind you all again that we will be happy to have you out-of-towners drop in at the M.I.T. Club of New York when you are down this way, or up this way, whichever. Class of 1919 luncheon is held on Friday of the first "full week" (Monday on) of each month. Jim Strobbridge, Dusty Rhodes, E. G. Paterson, Otto Muller, John Meader, Buzz deLima, Bill Bassett, Al Wiren, Ed Flynn, Charlie Parsons, and Yours Truly get to most of the monthly luncheons, and we'll be glad to see you. But come in on some other day, if you can't make it at the time of the class get-together. You'll surely always find some fellows that you know and can chin with.

We have new addresses for: Robert Mitchell, 32 Garden Street, Milton 86, Mass.; Mason S. Noyes, 218 Fairlawn Road, St. Matthews 7, Ky.; Carl W. Phelps, who has returned from India and is now at 4349 East 16th Street, Tucson, Ariz.; and Ed Saunders, who has moved from Takoma Park, Md., to 723 Town Mountain Road, Asheville, N.C. We'd like to hear from you all; you surely must have some items for our news notes.

And so, we come to the close of another year of Tech Review and our class notes. Be back again with you in the fall, Lord willing! Have a great, good summer all of you! — E. R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York 17, N.Y.

1921

Another Alumni Day has whizzed by to tick off the passage of both an academic and an alumni year, the 98th in the history of M.I.T., and one crammed with events of importance for all of us. Since this issue of *The Review* completes the current volume and heralds a short pause in publication until the November issue opens a new volume, news of 1921 gatherings in June to celebrate the inauguration of Technology's 11th President, Julius A. Stratton '23, must await the coming of fall. As usual, we ask your patient indulgence until then and earnestly urge that you make certain that your contribution to this year's amity fund (which counts towards our fortieth reunion gift) has been sent to Cambridge to insure your continued receipt of *The Review*. Your satisfaction at having shared in the Institute's phenomenal advancement will be matched only by the grateful thanks of Class Agents Ed Farland and Larc Randall and the pleasure of Ted Steffian and your Secretary at having you continue to be present in our monthly audience. If you've forgotten, it's never too late to send a check to the amity fund office in Cambridge.

Advance promises at this early date augur well for 1921 attendance with wives and guests at Alumni Day. Your Class President, Ray St. Laurent, and Secretary, Cac Clarke, are honored as representatives of 1921 in the academic procession for the inauguration. If you were there, you will have heard more about the plans being made for our big 40th reunion in June, 1961, concurrently with the Institute's 100th birthday celebration. You will also have heard of the special 1921 gathering to take place in Cambridge at the time of the third Alumni Officers' Conference next September 11 and 12. We'll continue to keep you informed on the progress of class affairs by means of these notes and special mailings.

To the Reverend Samuel H. Miller, one of the four ministers in the Class of 1921, has come the outstanding distinction of being named dean of the Harvard Divinity School. Pastor of the Old Cambridge Baptist Church and Professor of Pastoral Theology at Harvard, he held various pastorates in Belmar, Arlington, and Clifton, N.J., before coming to Cambridge in 1933.

Signal honors continue to seek out Dr. Augustus B. Kinzel, who was the recipient in May of the Stevens Institute of Technology Medal for Powder Metallurgy. Gus has just retired as the national president of the American Institute of Mining, Metallurgical and Petroleum Engineers and writes that he has taken on the vice-presidency of the Engineers Joint Council. He says his efforts are directed towards an engineering unity organization to bring the E.J.C. and the Engineers' Council for Professional Development under a single umbrella organization. Gus continues as an Alumni term member of the M.I.T. Corporation. He is vice-president and director of research of Union Carbide Corporation.

Connecticut papers have featured the honors accorded to Saul Silverstein in winning the McAuliffe Medal, as announced by the Right Reverend Monsignor Joseph F. Donnelly, Director of the Diocesan Labor Institute of the Archdiocese of Hartford, which makes the award annually to representatives of management and labor who have infused into labor-management relations a spirit of good will, co-operation, and understanding. The medal, presented in May by the Archbishop of Hartford, recognizes the model management-labor relations of the Rogers Corporation of which Saul is president. Our thanks are directed to Dick Feingold, Secretary of the Class of 1943, for his thoughtfulness in sending us a clipping about Saul's latest honors.

Joseph Wenick has been honored for the 10th consecutive year in his election as treasurer of the M.I.T. Club of Northern New Jersey. Joe does such a tremendous job that the boys won't let him quit. A member of the board of governors of the club and an educational counselor of the Institute, he manages to sandwich in a little time as manager and chief engineer of the Lightolier Company. The final banquet of the season for the New Jersey club, addressed by Dr. Elbert P. Little of M.I.T., served as the locale for a miniature 1921 reunion of retiring club

president Sumner Hayward and Betty Hayward, Joe and Dorothy Wenick, Munnie and Alex Hawes, and Cac and Maxine Clarke.

We had a pleasant telephone conversation with Alexander D. Harvey, now chief of the investment division for the New York region of the Small Business Administration. One of the major objectives is to induce private capital to form investment organizations in the interest of aiding smaller business concerns. Dan is located at 42 Broadway, New York City, and reports he recently saw Dick Windisch. Ernest Henderson is guiding the Sheraton Corporation of America to new peaks of progress in the hotel field. Latest announcement tells of coming ground breaking ceremonies near the Oakland, Calif., intersection having the sixth highest traffic count in the nation, for a 300-room luxury hotel to cost six million dollars, in addition to retail stores and a multistory garage.

Elliott B. Roberts, Captain, U.S. Coast and Geodetic Survey, adds to his many literary laurels with an excellent presentation in the May issue of *The Technology Review* of his observations of contrasts in Russia. George F. B. Owens has returned from his winter sojourn in Florida to open his Long Island home. W. Corydon Kohl advises his home address has changed from Cambridge to P.O. Box 11, North Sutton, N.H. Victor S. Phaneuf says he is an assistant professor at the University of Florida, Gainesville, Fla.

Stewart P. Coleman, Vice-president and director of the Standard Oil Company of New Jersey, is also chairman of its co-ordinating committee. A graduate of Rice Institute, he joined the Humble Oil and Refining Company as a chemical engineer and attended Technology on a leave of absence. He transferred to the New Jersey Company in 1933, specializing in co-ordination and economics. He was elected a vice-president in 1955. He is a member of the Foreign Petroleum Supply Committee, sponsored by the U.S. government. In 1958, he was honored with the award of the *Insignia Commendatore* of the Republic of Italy for his work in behalf of the petroleum industry as chairman of the Middle East Emergency Committee during the Suez crisis in 1957.

The modest class letter from our President, Ray St. Laurent, lists figures on your excellent performance in giving to the amity fund, under the direction of our team of Mich Bawden, special gifts chairman; Irv Jakobson, chairman of the 40th reunion gift; and Class Agents Ed Farland and Larc Randall. Latest data on the 30 class groups with special gifts programs show that 1921 is the 23d smallest in number of active members and that it has gone from sixth place last year in both total number of contributors and the total amount contributed, to second place in number of contributors this year and first place in the amount contributed. Everyone deserves thanks, congratulations, and a big hand for piling up this fine record! Ray writes that he and Helen are flying from Boston on May 7 to Shannon, Ireland, to start a two-week trip through that country. Flying from Dublin to Lon-

don, they will next tour Devon and Cornwall and sail from Liverpool to Montreal in time to be on hand at Alumni Day.

Dugald C. Jackson sent a most welcome letter, announcing the arrival of two new granddaughters: Barbara Elaine on February 4 to son Dan Jackson, and Louise Anne on April 4 to daughter Betsy Seabury. Dug and Betty now have six grandsons and four granddaughters. He continues, in part: "I attended the winter meeting of the American Institute of Electrical Engineers in New York. I am serving on the board of directors of the Baltimore chapter of the Society for the Advancement of Management and on one committee each of the American Institute of Electrical Engineers, the American Society of Mechanical Engineers, and the American Society for Engineering Education. Betty and I will attend the annual meeting of the A.S.E.E. at the University of Pittsburgh and Carnegie Institute of Technology from June 13 to 21 and will miss the doings at Alumni Day. Betty is active with the Republican Women's Club of Hartford County as president. She is also active in the League of Women Voters, the American Association of University Women, and a Red Cross Gray Lady at the Aberdeen Proving Grounds Hospital."

As we go to press, Maxine received a lovely letter from Graciela Rodríguez, telling of a forthcoming trip to Hawaii. There followed another message from Miami, in which Helier said they were poised to hop off for Los Angeles on their way to attend a sugar chemists convention in Honolulu. We alerted that reunion-minded Hawaiian group—Harry Field, Fred Kingman, the Reverend Will Wirt, and K. C. Mui—to have them prepare the full welcoming treatment. Just in under the wire is a jumbo post card of hula dancers in the shadow of Diamond Head, with a note: "Here we are in Honolulu, making plans for a reunion of the Class in this charming place of wonderful scenery and sweet soft music. The picture shows some of the entertainers who have attended the meeting. K. C. Mui, Vice-president of the Liberty Bank, has been contacted to insure adequate financial support. Fred Kingman, temporarily out of town, will be drafted into attendance on his return; and the Reverend Will Wirt is researching voo-doo music to assure complete success. Best wishes to you and Maxine from Graciela, Catherine, Harry and Helier." To which there is appended: "I concur. Will write later. Aloha. Harry."

William Faulkner Atwood died at his home in Auburndale, Mass., on April 26, 1959, and it is with heavy heart that we express to his family sincere sympathy on behalf of the entire Class. Associated with us in Course X and a member of the Students' Army Training Corps in our freshman year, he had for many years been in charge of cost accounting for the Nashua Manufacturing Company in Nashua, N.H. He had also served as a consulting engineer for the Barnes Textile Association of Boston. Most recently, he had been cost analyst of the Pepperell Manufacturing Company, Boston. He was active in the Boy Scouts of America in his home community. He is survived by his wife, Bertha Davis Atwood; a

daughter, Marilyn; a son, William; and a sister, Miss Catherine Atwood, all of Auburndale. We are indebted to Edward B. Rowe, Secretary of the Class of 1906, for his friendly courtesy in forwarding data for the preparation of these notes.

A most happy summer to you and yours from all of us. Please be sure to meet here around the 1921 fireside in the fall and, in the meanwhile, send a note to your Secretaries. — CAROLE A. CLARKE, *Secretary*, Components Division, International Telephone and Telegraph Corporation, 100 Kingsland Road, Clifton, N.J. EDWIN T. STEFFIAN, *Assistant Secretary*, Edwin T. Steffian, Architect, 11 Beacon Street, Boston 8, Mass.

1922

Since Buffalo has the finest weather in the world during the summer and fall due to its automatic air conditioning from Lake Erie, your secretary has now come out of his cocoon and invites any and all to drop in while seeing Niagara Falls. Our Class has been very ably represented on the books of the Alumni Fund with generous donors. We must also congratulate the Class of 1923 and Cecil Green on their contribution of the Earth Sciences Center. We hope '22 can do as well some day.

Clate Grover has written about a visit with Horace McCurdy on Mercer Island. Horace is now sponsoring and developing a wing of the Seattle Museum of Natural History devoted to maritime history, particularly of the northwest. Over the many years he has been making an outstanding collection of first editions relating to the maritime history. This library will eventually be given to the museum. Mac said that he is retaining the dredging end of the business and will remain as president for the next year or so following Northrup's wishes. Mac is reported to be in fine spirits and good health. Ray Ellis, vice-president of Raytheon's International Division, recently returned from a four-week tour covering electronic plants and research in Russia. He traveled 8,000 air miles within the Russian borders and interviewed 110 people in the electronic field. Ray was one of six United States electronics experts who toured the Soviet Union on an exchange program. He returned home with some 200 electronic component samples, 1,500 still photographs, 2,000 feet of uncensored film, and plenty of opinions.

William H. Mueser has been congratulated for his award as metropolitan civil engineer of the year for 1958. He was notified by the president of the metropolitan section of the American Society of Civil Engineers and was given recognition for exceptional service to the civil engineering profession in the New York-New Jersey metropolitan area. This award was based on recognition of his many years of accomplishments in foundation engineering and, in particular, for his "part in the imaginative design and installation of foundations for the Chase Manhattan Bank Building." This unusual distinction we all know to be most deserved. Godfrey Speir of West Caldwell, New Jersey has received a high mark in the class books for writing a good general

letter to your secretary. He favors the 40th reunion as a stag affair to be held at Pine Orchard. Portions of his good letter follow: "Russell Hemeon, as well as being a classmate, is my brother-in-law, so I communicate with him occasionally. He seems still to be pulling his weight with one of the General Motors satellites in Trenton, N.J., and has an occasional bout with the onset of growing older—which most of us probably are enduring although we hate to admit it. I still manage to keep my nose clean and my stomach comfortably equipped with food, as patent attorney with the Propeller Division of Curtiss-Wright Corporation, here in Caldwell, N.J. I look forward to about a year from now when Carol and I expect to shed the daily routine here and establish a new one, by retirement to a home we bought at Chatham, Cape Cod, Mass. There, with a reasonably assured subsistence, we hope to do as we darn well please and to stir up a new set of interests and troubles, including boating and fishing, gardening, and such other business and professional pursuits as we run into or create. My ambitions have not run toward becoming a tycoon, dedicated altruist, or other such noble career; so we take life pretty much as it comes, with a bit of a forward look to the day when our kids seem to us to be as good as we are. That day is fast approaching if it is not already past! In that connection, when I married Carol 10 years ago, I acquired Bob, Joan, and Neal, all now graduates of Rutgers, including the girl's Douglass College, and are all now on their own and doing a good job. We boast of four and one-half grandchildren."

George Dandrow has sent in general information on Carl Shattuck, who was recently elected president of the McKiernan-Terry Corporation. Carl, who was formerly first vice-president, succeeded Mr. John C. Smaltz, who is now going to devote his entire time to the engineering and research work of the corporation. Carl has been connected with the corporation for 30 years and was previously in charge of its Dover plant. He lives at Mountain Lakes, N.J., and has three children—Merrill, Whitney, and Seth—and three grandchildren. Congratulations to Carl and best wishes in this period of additional responsibility.

Stephen B. Neiley of Adams, Mass., has been appointed engineering manager of Dewey and Almy's Battery, Polyfibrone and Textile Division and is returning to Cambridge. His division manufactures shoe products and textile printing blankets at Adams and automotive battery separators at Acton and Owensboro, Ky. Steve's community interests in Adams include vice-president and director of the Greylock National Bank, trustee and treasurer of W. B. Plunkett Memorial Hospital, member of the Selective Service Board, chairman of the Adams Finance Committee, and corporator of the South Adams Savings Bank. He is also president of the Outing Club of Pownal, Vt., and a member of the American Legion of Adams, Lions Club, Adams Chamber of Commerce, and the American Chemical Society. It seems natural to assume that Steve will be greatly missed from this community.

Latimer F. Hickernell, President of the American Institute of Electrical Engineers, spoke at the opening session of the Empire District meeting held in Syracuse, N.Y., on April 29. Additional congratulations go to him for holding this top position in the electrical engineering profession. Peter T. Lamont, director and company executive of the Standard Oil Company, N.J., now concerns himself particularly with marketing problems and with certain European, North African, and South American affiliates. Before being elected to the Jersey board, he served as co-ordinator for world-wide marketing activities of the company. In early 1959 he received the insignia of Commander, Order of Merit of the Italian Republic, in recognition of his services to Italy.

Harold R. Boyer of Cleveland was recently named as director of military products, a newly created position for General Motors.

Some new addresses in which you might be interested are: Stephen B. Neiley, Winchester, Mass.; Keith W. Robbins, Shelter Bay, Quebec, Canada; Dana D. Sawyer, Winchester, Mass.; John M. Goodnow, Greenbush, Mass.; Robert M. Arnold, Chicago, Ill.; E. Allan Reinhardt, Wellesley, Mass.; Tom T. Freeman, Denver, Colo.; Lawrence P. Bliss, York Beach, Maine; Hugh Elliott, Sierra Madre, Calif.; and Rear Admiral Lloyd Harrison, Clayton, Mo. Please write me during the summer for louder and funnier notes in the fall. Will be seeing you at Alumni Day, June 15. Good luck. — WHITWORTH FERGUSON, Secretary, 333 Ellicott Street, Buffalo 3, N.Y. C. GEORGE DANDROW, Assistant Secretary, Johns-Manville Corporation, 22 East 40th Street, New York 16, N.Y.

1923

Walter F. Munford was named president and chief administrative officer of the United States Steel Corporation on May 5. He was elevated to this position from that of executive vice-president for engineering and research. Walter has been in the operating end of the business for almost 36 years. As United States Steel's new president, Walter will take over the most efficient and the biggest steel operation in history.

Hugh S. Ferguson has been elected president of the National Research Corporation of Cambridge and assumed that post on May 1. Hugh is a director of the company, and was associated for many years with Dewey and Almy Chemical Company as treasurer, executive vice-president, and president. After the merger of Dewey and Almy with W. R. Grace and Company, he became a director of W. R. Grace and subsequently served as executive vice-president in charge of the chemical group. He is a member of the Corporation of M.I.T., past president of the M.I.T. Alumni Association, and a director of the Foxboro Company.

Howard Russell is president of the White Plains Rotary Club, and the following note from him should be of interest to you: "Alfred E. Perlman, President of the New York Central System, spoke before the Rotary district conference at Bear Mountain on April 6. His subject

was 'Community Service'; and he did a splendid job, telling about the part railroads play in suburban life and also telling about some of the difficulties they have in operating under antiquated laws."

The Class of 1923 was well represented at the annual Fiesta of the M.I.T. Club of Mexico City on March 11, 12, and 13, by: John Murphy and his wife, Helen; Cecil Green and his wife, Ida; Dave Skinner and his wife, Isabelle; and, of course, our honorary class member Lobby and his wife, Conchita. (Incidentally, Lobby got the Eagerismo Beaver award as having attended the most Fiestas—in fact, all of them.) Dave Skinner wrote, in part: "It was swell fun and leaves you with a feeling of, 'I'd like to go back again.' My wife and I also went on to Sao Paulo, Brazil, where we spent two weeks with Dave Davenport and his wife. While we were there, they had some local M.I.T. graduates over and were trying to talk up a Brazilian Fiesta that would encourage more people to visit Brazil. Fred Bush, Course II, was at the party and wished to be remembered to one and all. After Sao Paulo we spent a few days in Caracas on the way home and, as usual, enjoyed all our trip but were glad to get back home."

A clipping from the *New York Herald-Tribune* indicates that John Burchard's son, Marshall Gaines Burchard, married Miss Sue Ann Huston of Jackson, Mich. The ceremony was performed at Follen Community Church in Lexington.

Ray Bond has appointed your Secretary to act also in the position of treasurer, so that until further notice, your Secretary is secretary-treasurer.

You will be interested to know that Franklin Haven and George Johnson attended the funeral of our late Treasurer, Penn Howland, and also took care of a flower remembrance from the Class. Mrs. Howland was very appreciative. The following note was received from her: "I learned that you were responsible for the beautiful arrangement of lilies, pink and white carnations, and pink snapdragon. May I offer you my most sincere thanks and will you please extend them to any of the classmates who have participated. It was a most understanding and sympathetic thing to do, and I want you to know how deeply I appreciate it."

Last month we reported the death of Charles M. Jones on April 12, 1959. He was vice-president of public and industrial relations of the John A. Roebling's Sons Corporation. He helped to supervise the design and erection of cables for the George Washington and Golden Gate Bridges. He was born in Asheville, N.C., and he graduated from the U.S. Naval Academy as well as M.I.T. He has been a trustee of the Trenton School of Industrial Arts; he was a director of the New Jersey State Chamber of Commerce, the Greater Trenton Chamber of Commerce, and the Trenton Trust Company.

We mentioned briefly before the death of Leo S. Hayes. Since that time we have received memorandums from Norman Weiss and from Mrs. Hayes, which provide some additional information. Leo died the 31st of January, 1959, of a coronary thrombosis in Tucson, Ariz. Leo was associated with the American Smelt-

ing and Refining Company, and was employed in Tucson, Ariz., as resident engineer in the Southwestern Mining Department. He has been with this company for many years and spent most of his active years in mining (approximately 17 years in South America). During World War II, he served the government in Washington in the metals premium price plan and then joined American Smelting in the New York office. He and his wife, Dorothy, moved to Tucson about five years ago.

We have the following address changes: Edwin E. Turner, 30 New Estate Road, Littleton, Mass.; Dr. Per K. Frolich, 9517 Kenneth Drive, Annandale, Va.; Benjamin B. Drisko, Rockport, Maine; Philip W. Powell, 455 Hyde Street, San Francisco, Calif. — HERBERT L. HAYDEN, Secretary, E. I. du Pont de Nemours and Company, Leominster, Mass. ALBERT S. REDWAY, Assistant Secretary, 47 Deepwood Drive, Hamden 17, Conn.

1924

Reunion, Inauguration, Alumni Day — these are over now, happy memories for a great many of us. We'll have to wait until the first issue next fall to fill you in on the details, however. In the meantime, there's the whole summer in which to recuperate, while putting those martini pitchers to good use.

So let's see what we have for our last notes of the spring season. An unexpected and very welcome caller in May was Bob Dehlendorf. Delco has made a number of shifts recently, or as they called it, "realignment of responsibilities." From refrigeration motors product manager Bob has now been named service manager, technical service and advertising. Among other things, it means he'll be getting around the country more.

At a meeting in May the National Association for Armenian Studies and Research heard reports on recent investigations into medieval Armenia, established a professorship at Harvard. Two of the leading spirits in the organization: Rouben Mamoulian, famed Hollywood director, and General Sarkis Zartarian. Most important business item that has come to our attention recently is the appointment of Carleton Shugg to the presidency of the Electric Boat Division of General Dynamics. You will remember that he went with Electric Boat almost 10 years ago after a period with the Atomic Energy Commission. His specialty is nuclear propulsion.

This winter Austin Cooley gave a paper at an American Institute of Electrical Engineers meeting on "Error Detecting, Servo Correcting Phasing System for Facsimile." If we had only reported this earlier, you might have asked him at reunion what it was all about. And another A.I.E.E. gathering heard Al Anderson talk about "Distribution Secondary Conductor Electronics." Al is with Ebasco Services. The National Science Foundation has set up a Science Information Council composed of 19 leaders in the field of scientific documentation. One of their number: Dr. Elmer Hutchison, Director of the American Institute of Physics.

It's Admiral Frank G. Fahrion now, upped from vice-admiral in May. Sam Graham was born in Louisiana. He graduated in civil engineering and followed it around the world, his last stint being for the Navy in California. Now Sam has retired — to Louisiana, of course.

One sorry note that took us a long time to catch up with: Dave Grant died in April last year after a long illness. For years Dave was an entertainer on vaudeville and radio, then became producer-director of the wartime Vox Pop program, and in late years before his illness was with an advertising outfit in Hollywood.

You will remember that famed two-piano team, the Dippy Davy Duo. Dave Grant was one half, the other was Osborne H. Davol. Probably few of you ever knew his name was Osborne — he was Dippy to everyone. He stuck to his training, not his avocation, and is now manager of the Engineering and Construction Department of Union Carbide Metals in Niagara Falls. Dippy and Kathleen were with us at reunion.

The Voyages of Simonds the Sailor continue. Latest sequence is France to Venezuela to Galveston, the last port of call to change a bent propeller. Reason for bending was not indicated.

As we said earlier, reunion is still to come as these notes are written. However, your committees have been very busy practicing up. First was that delightful meeting at the Lehrers' away back last winter. Then a most enjoyable one at the Duevels' in May. Our wives were with us on both occasions. The Athertons came down from New Hampshire for the second one, and the Conways made the trip up from Baltimore. If you're ever tapped for a reunion committee job, don't say no. These meetings are fun! Next fall we'll tell you all about the Big Affair itself. In the meantime, a good summer to all of you, with lots of time to loaf and let the sun sink into your bones. So much until then. — HENRY B. KANE, Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

1925

A very nice letter from Glen Bateman points to the fact that too few members of the Class of 1925 find time to drop a line to the Secretary on occasion. Glen says that he looks forward to finding notes in *The Review* each month; but it appears that most of the Class have as much lead in their tails as he has had himself in writing. He has certainly redeemed himself and is in good standing as of now. How about the rest of you? Glen has, of course, been in South Africa almost continuously since graduation. Since 1945, he has been managing director of Edward L. Bateman, Ltd.; but as of the end of May, 1959, his brother Ed'34, will assume this responsibility while Glen will become chairman. He does not intend to serve as chairman in an executive capacity but plans to live on his farm in Natal, where he is building up a pedigree Friesland herd (Holstein to most of you). He plans to attend directors' meetings once a month

and do a little kibitzing. He has a married daughter living in California who made him a grandfather last July; and his son, who graduated from the Institute last year, is putting in a three-year stretch with the U.S. Army.

A couple of months ago it was noted that Colonel Edgar R. C. Ward, U. S. Army (retired), was running for selectman, assessor, and overseer of the poor in his retirement town of Falmouth, Maine. To complete this story, he won out by the narrow margin of 444 to 425 in an upset win over the incumbent, who was seeking a fourth term.

Congratulations are in order for Ello E. Richardson, who has recently been promoted to vice-president and general manager of the Cambridge Gas Company. He joined the company as an engineer upon graduation and has been with them since. In 1956 he was named general manager succeeding Gordon Howie (Class of 1913), who at that time retired from the position.

A news release from Harvard University concerns Professor Kenneth Bainbridge, who has made many contributions to the U. S. science effort over the past years. He is especially noted for his fundamental work on isotopes and radioactivity. Recently he and his associates have been studying the way that the rate of radioactivity in certain elements can be changed.

John Magee, an investment counselor in Springfield, Mass., has recently completed the writing of his second book entitled *The General Semantics of Wall Street*. John's first book was entitled *Technical Analysis of Stock Trends*, which proved sufficiently popular to achieve a fourth edition.

An interesting article has appeared regarding Arthur L. Samuel, who talked at a recent meeting of the Chicago section of the Institute of Radio Engineers about machine learning. As some of you may remember, a few years ago he undertook to program a digital computer at the University of Illinois so that it could play checkers. As a result of his work at Illinois in computers, Arthur went on to International Business Machines, where he is now consultant to the director of research.

It is my sad duty to announce the death of Glennon Gilboy in Boston on April 17, 1959. As an authority on soil mechanics, he was associated with C. J. D'Amato and Associates of Boston at the time of his death. Burial was at the Evergreen Cemetery in Manchester, N.H. — F. L. FOSTER, Secretary, Room 5-105, M.I.T., Cambridge 39, Mass.

1926

If I say that I hear the sea rolling in with regular irregularity and that it tends to make me relax as I write these notes on a balmy evening — with a new moon overhead — you will surely think that I am writing from Pigeon Cove. But this sea is not even the Atlantic and the notes are really being composed in California — at La Jolla. Why I have to be on the ocean when I go away is hard to explain, but there seems to be no substitute when the sea is in your blood. As a matter of

fact, there is an active Star Boat fleet at San Diego and that may have had some influence on my desire to visit this area. And this summer the world championship Star races will be at Newport, Calif., so I guess I'll be visiting Newport, too.

We came out on a 707 jet a couple of days ago and feel that we are real pioneers. In order to be sure that we were on time for a 9:45 A.M. flight from Idlewild, we flew over to New York the night before. While we were at the International Hotel that evening about 90 people came in together; and after they registered I talked with the desk clerk. "Oh, that was the jet to London that did not take off." I should have taken heed, especially when I learned that this was the third night in a row that the jet for London had not taken off. It couldn't happen to us — but it did. At 9:45 A.M. we were aboard and the plane wheeled around to swing down the runway and then wheeled right back to the dock. They tinkered; they explained; they bought us a lunch at the Golden Door restaurant; and finally at 5:00 P.M. we were at the beginning of the runway waiting for the tower O.K. It was worth all the inconvenience and waiting; from that moment on it was an experience.

We sat there with the brakes on as the pilot turned up the jets; then all of a sudden he released the brakes. We burst down the runway at a speed only the fastest racing cars ever reach — close to 200 miles per hour before take-off. The wings flap like a bird's and the engines bob up and down until you get up and level off at about 30,000 feet. Then it's just as promised — vibrationless. I tried standing a quarter on edge, as you are supposed to be able to do. It worked! There is a table or shelf between the seats which, when you are not using it for balancing a quarter, makes a nice place to rest a martini. We made it in the scheduled five and one-half hours and sat down in Los Angeles smoother than I had ever experienced in any plane. It's quite a buggy, and it really gets you there once you get started.

Believe it or not I brought along some clippings, and so forth, for class notes. A letter from Ernie Warburton advises that he has retired from the Air Force. He enclosed a newspaper from Elgin Air Force Base, Fla., and I have the clipping with me and will excerpt it as follows: "While attending the Massachusetts Institute of Technology, young Warburton was a member of the Reserve Officers Training Corps, receiving a commission in the Air Service Reserves in June, 1926. After earning his Air Pilot Wings he received a regular commission in the Air Corps. While stationed at Selfridge, Lieutenant Warburton became a member of an aerobatic trio composed of Lieutenants Robert W. Burns and Hanlon VanAuken, being known as the Three Musketeers. They thrilled audiences at the ninth Mitchell Trophy Race with their close precision flying.

"During the period the Army flew the mail between Newark, N.J., and Cleveland, Lieutenant Warburton was one of the pilots. Later he became chief of the Air Material Command's Flight Test Division at Wright Field, Ohio, fly-

ing more than 2,500 hours as an experimental test pilot in over 250 different types of aircraft, including numerous English and captured Japanese and German aircraft during World War II. In September, 1944, he assumed the position of deputy chief of staff for Plans of the Far East Air Service Command, and the following December took over the command of the 46th Air Service Group and commanded the troops that made the first landing in Japan. In 1952 he went to Korea as deputy chief of staff, Operations, for the fifth Air Force. Later he became deputy commander of the fifth Air Force with the added duty of commanding general of the Taegu Area Command. In July, 1953, General Warburton became chief of staff for T.A.C., and in June, 1957, took command of the Air Force Operational Test Center.

"A command pilot since July, 1941, General Warburton has logged over 10,000 flying hours in 465 different types of aircraft. He has been awarded the Distinguished Flying Cross, Legion with two Oak Leaf Clusters, Bronze Star, and Air Medal with three Oak Leaf Clusters, among many other distinctions. He has held the rank of brigadier general since July, 1951. Born July 12, 1904, in Norwood, Mass., he married the former Ann Ward in 1935, and they have seven children." In Ernie's letter he advises that he is reporting to The Hague, Netherlands, shortly to become Air Force adviser for the Shape Air Defense Technical Center. In a postscript, Ernie states that he has a 100-acre farm at Hardwick, Mass., where he expects to retire someday, but right now four of his seven children are in college with three to go.

A clipping from a Hartford newspaper tells of the advancement of Robert W. Conly to senior vice-president and controller of the Aetna Life Insurance Company and affiliated companies. Bob joined Aetna upon graduation and has advanced through many management assignments to this present lofty one. Congratulations, Bob! There are so many clippings about Stark Draper that I could fill the notes each month with them. This particular one would fill this issue, so I'll give it to you in my language. Stark's newest honor assignment and what have you is appointment by Secretary of Commerce Lewis L. Strauss as chairman of the National Inventors Council to succeed the late Dr. Charles F. Kettering. The Council is composed of distinguished scientists, engineers, research administrators, and the chiefs of Army, Navy, and Air Force. It serves as liaison agency between the Armed Forces and the nation's civilian inventors. Congratulations again, Stark!

There is one thing about inns, beach clubs, and such places that I dislike, and that's waiting for breakfast. I've been doing just that as I write these notes, but the minute hand on my watch is approaching the hour of 8:00 A.M. So this is a proper time and note to wind up the notes for this issue and for this season. Will we be hearing from you this summer? A post card, a clipping, or even a letter will help get the notes off to a flying start in the fall. And should you be in New England — don't forget that we will be at Pigeon Cove! — GEORGE

WARREN SMITH, *Secretary*, c/o E. I. du Pont de Nemours and Company, Room 325, 140 Federal Street, Boston 10, Mass.

1927

Announcement was recently made of the appointment of J. Robert Bonnar as director of marketing, Dyestuffs and Chemical Division of General Aniline and Film Corporation. In his new position, he will have direct supervision of all sales and related marketing functions of the division. Prior to this appointment, he was sales manager — Dyestuffs, a position he had occupied since 1953. He joined General Dyestuff Corporation in 1935 as manager of the Technical Department; prior to that time, he was technical director of the American Printing Company, Fall River, Mass. Bob has been active in numerous trade and technical associations and is a past president of the American Association of Textile Chemists and Colorists.

It is interesting to note that E. Robert deLuccia has been selected for the national nominating committee (district 10), and William L. Taggart for vice-president of the M.I.T. Alumni Association.

Harold W. Fisher (see June notes) most recently has been serving as joint managing director in London of the Iraq Petroleum Company, Ltd., in which Jersey has a minority interest. In 1951 he was appointed co-ordinator of world-wide refining activities for Jersey. From 1954 until his election to the board of Iraq Petroleum in 1957, he served as Jersey's shareholder representative for the United Kingdom and chairman of its co-ordination committee for Europe.

Here is a goodly portion of a most interesting letter from Colonel Paul N. Ivancich, who now resides at 338 West Twohig Avenue, San Angelo, Texas: "Thanks for your letter. I retired from the Air Force last year. At this time I am in Europe for a year. Was called up in 1940 with the Army and remained until retirement, changing to the Air Force in 1949. Spent the war in the U.S., training troops for the engineers. Four years in Germany after the war, then back to the States for four, then Japan for three and came home from there. I have a daughter aged 15 now in school in Switzerland. Regards to class of '27."

Among the participants at the Empire District meeting of the American Institute of Electrical Engineers held in Syracuse, N.Y., April 29 to May 1, was J. Burns McClure of General Electric Company who, with Mr. A. G. Mellor, gave a paper, "Progress Toward Economical Nuclear Power with Boiling Water Reactors."

At a recent dinner meeting of the Chicopee Kiwanis Club, John C. Parker gave a talk on "Legends and Architecture of Famous New England Homes." As a note of interest, John was architect at the U.S. Military Academy at West Point, where he designed many buildings, for ten years. He also designed Memorial Arch on Flirtation Walk which appeared in the movie, "The West Point Story."

On June 15, Dr. Julius A. Stratton, as you know, will be inaugurated the 11th President of M.I.T.; and we are looking forward with pleasure to seeing many of you at that time.

We regret to advise of the death of Benjamin F. Wood on September 29, 1958. — J. S. HARRIS, *Secretary*, Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

1928

Roxanne, the older daughter of Florence and Ralph Jope, was married to James N. McNamara at Saint Francis of Assisi Church in Medford, on Saturday, April 25. Father J. Edward Nugent, M.I.T. religious counselor, performed the ceremony. The reception was held at the M.I.T. Faculty Club. Roxanne graduated from Wellesley College with the Class of 1958 and is now a secretary at the Institute in the School of Industrial Management. Jim graduated with the M.I.T. Class of 1958 from Course XVIII and Course VI and is a tube design engineer with Raytheon Manufacturing Company. The newlyweds have their home in Boston. On behalf of the Class we extend our sincerest wishes for happiness and success to you, Roxanne and Jim.

We have been privileged to visit the beautiful new temple building of the Congregation of Agudas Achim in Leominster. Maurice Beren is a member of the building committee and is also on the board of trustees. The building was designed by Carney Goldberg, another of our good classmates, in co-operation with Isidor Richmond'16. Maurice is president of Pyrotex Company in Leominster, manufacturers of a variety of specially coated products of braid, fabric, and paper. His business associate is Morris Etstein, M.I.T.'32. Carney is a partner of the architectural firm, Isidor Richmond and Carney Goldberg, in Boston. At present Carney's firm is busy on plans for still another and larger new synagogue, Temple Beth Israel, in Worcester, Mass.

At the 1959 spring meeting, New England section, Air Pollution Control Association, your Assistant Secretary met Fred Lewis (Course X) who was attending the meeting for Esso Standard Oil Company. Fred is training supervisor for Esso at the Everett, Mass., plant and recently has entered into air pollution control activities. Fred's daughter, Janet, graduated from Westbrook Junior College, Portland, Maine, in 1957, and is now working in Los Angeles, Calif., for the Bank of America. This is a part of her plan to tour the country. Son Bob has just completed his second year in Course X and has a job with the M.I.T. Instrumentation Laboratory for the summer. We were pleased to learn from Fred that there is intraclass communication, on the ladies' part at least: wife, Janet, received a letter recently from Mrs. Max Parshall in Colorado. Fred is keeping up his activity in the Alumni Association; he was vice-chairman for Arlington, Mass., in this year's regional fund solicitation program.

Another good '28 man and Arlingtonian showed up in the course of the Fund

Drive. This was Kenneth Barney of Course IV. Ken is still with National Research Corporation, where he is specializing in high vacuum equipment and applications. His new fields of interest are space equipment and the testing of space equipment. Son Robert is completing his junior year at the University of Massachusetts, where he is majoring in government and political science. Robert is engaged to be married in June of this year.

Philip Taylor reports that he is still very busy at Kendall Mills in Walpole, Mass., where he is research chemical engineer. This company has made many important advances in non-woven fabrics. The Kendall milk filter, which Phil developed and carried through to production, is a widely used and very successful item. Phil's daughter, Jean, graduated from Walpole High School last year, where she won a General Motors National Scholarship. Now she has finished her freshman year at Radcliffe College, where she specializes in nuclear physics. Among his other activities, Phil managed the championship-winning Little League team in Walpole. It was also a Walpole team that won the West Norfolk County regional championship. Phil's brother, Dwight Taylor '26, is manager for Western Division of Connelly, Inc., where he has been responsible for an automatic control for the gas industry that blends butane with natural gas in correct proportion as the need requires.

Our very best wishes to everyone for an enjoyable summer. Please write in and tell us about your work, play, travels, family, and so forth. **GEORGE I. CHATFIELD, Secretary**, 11 Winfield Avenue, Harrison, N.Y. **WALTER J. SMITH, Assistant Secretary**, 15 Acorn Park, Cambridge, Mass.

1929

There really is not much news. I can't tell you much about the plans for the reunion except that it appears we will have 100 odd people attending. More about the attendance in the next issue, which will be in November. I expect at that time we will have lots of news items from those we will see at Bald Peak.

For those of you who attended, it was good to see you all again and for those who weren't able to attend, better luck next time. I hope you all have a grand summer. — **FISHER HILLS, Assistant Secretary**, 62 Whittemore Avenue, Cambridge 40, Mass.

1930

We recently had a note from Joe Harrington in which he told us that he ran across Hank Bates in the San Francisco Airport and rode with him down to Los Angeles. Hank is vice-president and director of administrative services for Johns-Manville and, although his headquarters are in New York, he is busy covering all their various plants and keeping their administrative activities rolling efficiently. He says that he is planning to attend our 30th reunion next year, and would like to be remembered to all.

Gil Cox has written us that he was transferred from INCO to Whitehead in Rochester, N.Y., as the latter's technical manager, after 28 years with the Development and Research Department of the International Nickel Company. This transfer makes Gil's good friend, Clate Grover '22, his boss. In fact, during Gil's earlier days, the Class of '22 adopted him as an honorary member and he used to go to their meetings.

Ted Criley is engaged in the practice of architecture at 911 East Foothill in Claremont, Calif. In 1957 he formed a partnership with Fred W. McDowell, and the firm name is now Theodore Criley, Jr., and Fred W. McDowell, Associated Architects, American Institute of Architects. Most of their work is institutional — schools, churches, college buildings. Their largest job now active is the campus of Southern California School of Theology, in association with Charles Luckman.

Tom DeMarco's vital statistics are as follows: residence, Wilbraham, Mass. (noted only for its academy and its peaches, but a comfortable place to live); domestic status — married, three children who are all reasonably compatible, but expensive to maintain; position, manager, Industrial Applications Department, Plastics Division, Monsanto Chemical Company, Springfield, Mass.; duties, essentially market development — new plastics applications, sales promotion, and so forth. The Monsanto House of the Future (done with the assistance of M.I.T. Architecture Department) is now one of his projects.

It is nearly two years now since Bill Dickerman returned from his assignment in London and Paris for the Lummus Company. He has an apartment near the office and near the United Nations, a location that makes the best of the East River breezes in the summer. Bill has every expectation of attending our reunion next year.

We recently heard from Les Engler, who is dean of administration at the City College of New York, a position he has held since 1949. He became a member of the Civil Engineering Department of that college in 1934 and says he still manages to teach a little civil engineering now and then. His older boy, aged 20, is finishing his sophomore year at the University of Notre Dame and majoring in English. The next in line, a boy, aged 17, is finishing his junior year in high school and plans to follow his brother to Notre Dame. His daughter, aged 15, is a high school sophomore without a choice of college as yet, but Les will give odds that it will not be M.I.T. He has had occasional contact with some of our classmates over the years, the most recent with Phil Riley. Phil is in the contracting business, working out of Lawrence, Mass.

Jack Latham sent up a copy of a letter he received from Joe Kania. Joe is an investment counselor in Vancouver, British Columbia, where he spent 12 years as a lecturer at the University there and the last three years on the Senate. For five years he has been chairman of the education committee of the University's Alumni Society and is now a member of the governing committee on curriculum

and junior colleges. In the local Y.M.C.A. he has been 20 years on the board of governors, chairman of World Service, and for the past three years regional chairman for world service and a member of the international committee. He has many other associations in the community but the University and the Y.M.C.A. make heavy inroads on his time. Last fall he and Mrs. Kania motored through Boston and called in at the M.I.T. Geology Department, which was his first opportunity since he graduated to see some of his old friends here.

Johnny Newsom has been appointed to the M.I.T. Educational Council, and will be working out of the Orlando-Winter Park, Fla., area.

I know you will all be sorry to hear that Johnny Pratt of Green Street, Castine, Maine, has been having a real tough time. In fact, in a letter to me (prompted by a letter he received from Jack Latham) Johnny said that Trouble is indeed a middle name sometimes! In November of 1957 he suffered a very serious heart attack, his second coronary since 1950. Johnny's 20-year-old son, Jay, is just completing his second year at the Portland School of Fine and Applied Art in Portland, Maine, and hopes to make commercial art his field of endeavor. Very best regards from all of us, Johnny.

Joe Stevens was recently elected president of the J. T. Baker Chemical Company of Phillipsburg, N.J., a wholly-owned subsidiary of the Vick Chemical Company, Inc. Joe joined Baker as director of organic research in 1944. Later he became successively director of research and development, vice-president and technical director, vice-president and operating manager, and executive vice-president and general manager. — **GEORGE P. WADSWORTH, Secretary**, Room 2-285, Department of Mathematics, M.I.T., Cambridge 39, Mass. **RALPH W. PETERS, Assistant Secretary**, 249 Hollywood Avenue, Rochester, N.Y.

1931

By the time these notes are published, Dr. Julius Stratton will have become the 11th President of the Institute. The Class of '31 can't let this occasion pass without extending our most sincere congratulations and good wishes to Dr. Stratton, the second M.I.T. graduate to become Prexy.

A clipping from the *Worcester*, (Mass.) *Gazette* tells that John Chibas is now a member of the "Campaign for Truth" in Cuba. As part of this campaign one of John's duties is to send the Declaration of the National Association of University Professionals of Cuba to this country. This declaration states: "the grounds for criticism, specifically directed at Cuba's revolutionary justice, reveal an ignorance of Cuba's immediate past and the existing conditions."

Harold Davis, quality control engineer for Raytheon Manufacturing Company's Industries Tube Division, presented a series of five industrial education lectures on basic sampling. Harold has been active in U.S. Army research and development.

Congratulations to our Class Vice-president, Claude Machen, on his recent

election as vice-president of Boston Gas Company. Claude, who lives in Wellesley, has been active in community affairs and is a director of the Wellesley Trust Company, a trustee of the Charlestown Savings Bank, and a trustee of the Chauncey Hall School.

It is with sorrow that we report the death of two of our classmates. George A. Sanderson died on April 12, 1959; but no details have been received, except that the *New York Times* was the source of information. Luther B. (Jack) Turner died of a heart attack on March 5 at the Louisville (Ky.) Airport while on a business trip. Luther, a Phi Beta Kappa graduate of the University of Kentucky, received his master's degree in chemical engineering in '31. He had been associated with Standard Oil affiliates for 27 years, spending most of his time in plastics and synthetic rubber development, a field in which he was considered an expert.

The following address changes have been received: Tufic A. Chemor, Eagle Pencil Company de Mexico, S. A. de C. V., Mexico City, Mexico; Leonard D. Christie, Jr., 38 West End Avenue, Old Greenwich, Conn.; Edward F. Coy, 123 Laredo Way, St. Petersburg 4, Fla.; John L. Dodson, R.D. #2, Montpelier, Vt.; Robert G. Fulton, 1310 Wraywood Place, Falls Church, Va.; Dr. Louis D. Harris, 242 Trumbull Street, Hartford 3, Conn.; Robert B. Horner, 245 East Adams Street, Jacksonville 2, Fla.; Dr. William H. Otis, Otis Clinic, 1630 Fifth Avenue, Moline, Ill. — EDWIN S. WORDEN, *Secretary*, 9 Murvon Court, Westport, Conn. GORDON A. SPEEDIE, *Assistant Secretary*, 90 Fal-mouth Road, Arlington 74, Mass.

1932

It is with a deep sense of personal regret that I report the death of one of our most prominent classmates, John B. Calkin, X, on April 19, of a heart attack in New York. John was very active in M.I.T. affairs and had recently been elected vice-president of the M.I.T. Club of New York. He was very faithful in keeping your Secretary supplied with news clippings of our classmates. John was president of the industrial consulting firm of Calkin and Bayley, Inc., of New York and had been associated for many years with the pulp and paper industry as a chemical engineer and paper technologist. He was the author of numerous publications on paper technology and related subjects and was very active in the American Chemical Society and the American Institute of Chemical Engineers. The Class has lost an ardent supporter who was the New York area chairman of the special gifts program for the contributions of our Class to the Alumni Fund. The sympathies of all of us are extended to his family.

James J. Robson, II, has been promoted to the position of director of Tire Engineering and Development of the Firestone Tire and Rubber Company. Jim now has jurisdiction over the design of all passenger car, truck, bus, tractor, airplane, and racing car tires. He has also been honored by being elected president of the Tire and Rim Association, Inc., the national co-ordinating body which sets in-

dustrial-wide standards for tires and rims. All of us wish you the best of luck in this new position, Jim.

Benjamin Wilbur, II, has been promoted to the post of structures engineer in the Ordnance Department of the General Electric Company in Pittsfield. James T. Snow, II, has been promoted to the position of plant engineer at the largest manufacturing facility of Lever Brothers in Hammond, Ind. He previously served in many capacities at the Cambridge plant.

Russell S. Robinson, IX-B, reports: "Trouble with design and idea consulting is that you often get the ball rolling, but you never stay very long in the game — you move on to another arena. After several years of consulting, I have at last succumbed to one of the games and have joined Aeronautics Systems, Inc., Newport Beach, Calif., where I live in sumptuous splendor at the edge of the harbor."

Colonel Myron L. Williams, VIII, sent me a card stating that he is now in Seoul, Korea, "exposed to Asian culture, next door to the great unknown of Eurasia." Colonel Williams is in the Signal Corps and has been transferred from the Operations Research Office of the Johns Hopkins Laboratory in Silver Springs, Md. Raymond H. Schaefer, X, has been a vice-president of the American Brake Shoe Company in charge of research and development for several years. The company has recently broadened the scope of his activities, which gives him a title which sounds like vice-president in charge of the Future. He has markets and products under his wing, as well as research. William E. Skelton, X, has moved from the Texaco Research Center in Beacon, N.Y., back to his native Texas, where he has been named assistant supervisor of asphalt research at the Texaco Research Laboratories in Port Arthur, Texas.

One of our classmates, John O. Patterson, IV, had quite a spread in the May 11 issue of *Time*. Long ago he left architecture for the Episcopal ministry. For the past 10 years he has been rector and headmaster of the Kent School. Now he is making headlines with his plans for converting this famous boys' preparatory school in Kent, Conn., into a coeducational school. To M.I.T. men, who were surrounded by women (all three of them) in college, the reason may not be unique.

James D. Abbott, X, has left his position as development engineer for Kendall Mills in Walpole and has joined the staff of the Gillette Safety Razor Company as an electronics engineer. He states that he still keeps up his membership in the American Chemical Society but got into electronic controls with Kendall and is continuing his interest in fibers — not cotton, this time. Gillette evidently does quite a bit of fundamental research on fibers as associated with hair to be removed from faces. I wish he would do some research around here, because the fad among undergraduates now seems to be to grow long woolly beards on their apparently ugly faces. The Admissions Office is not admitting as handsome a bunch of men as they did for the Class of 1932!

Have a good summer everybody, and please put your Secretary down for some

reports of your own activities! It is up to each one of you to keep this column alive and interesting. — ROLF ELIASSEN, *Secretary*, Room 1-138, M.I.T., Cambridge 39, Mass.

1933

Lay that glass down, man, and give the ice a chance to work while you share with pride the accomplishments and news of some of the brethren. It's downright impossible this month to put the "Man of the Month" tag on any of them, as you will see, for each deserves special mention.

We reported Dick Morse's appointment last month as the Army's new director of research and engineering. Press reports have come in by the bushel, and they are most impressive. One recalls that our Dick was selected in 1946 as one of the 10 outstanding young men of the year in the whole United States. Without hearing a dissenting vote, we'll decree unanimously that he still is both outstanding and young. His new post — and his willingness to make the sacrifice in accepting a major reduction in salary — prove conclusively that he still rates the outstanding. As for the young — well, who among you will stand up and be counted on the negative side? (Note: we expect many who see this before it's printed will feel the urge to censor the last sentence; just remember all you've learned about respect for old age!) To sum up, the *Boston Globe* puts the precise finger on our Richard with the phrase "the handsome 47-year-old executive." They might have added, to the discomfit of many of us, "graying but not balding." As a footnote, Dick's older boy has just been admitted to Princeton; we are hoping he'll head for M.I.T. for graduate study.

Speaking of admission, Hatem (we call him Tommy) Mostafa enters Tech this fall after a year at Chauncey Hall. In many ways, Tommy is the spitting image of Musty: imaginative, quick, suave, and destined for success in whatever he tackles. Musty, you'll recall, heads his own construction company in Egypt, and took time out last year to return for reunion with his charming wife, Mimi. Their daughter, Nadia, finishes college in California this year and is just as bright as a new penny. Musty's breadth of understanding of world affairs made him the natural center of all conversations during their month-long stay in this country last year.

Congratulations to Rodney Chipp for his promotion to director of engineering of International Telephone and Telegraph Communications Systems, Inc. Prior to joining I.T.T. in 1957, Rod was director of engineering of the DuMont Laboratories. Hats off, too, to Dick Valentine, who has just been appointed director of research and development for the New Departure Division of General Motors in Bristol, Conn. Dick has held a variety of key positions for New Departure for the last 20 years. We are very happy, too, to report that Fred Aldridge is now in charge of the International Sanitation Department in Washington. Fred has been to Asia to tackle sanitation problems.

Special honors go to Ed Gilliland, long-time distinguished Professor of Chemical Engineering at Tech, who has been awarded a \$1,000 prize by the American Chemical Society for his fundamental research in industrial and engineering chemistry. This is one — and a significant one — of several awards Ed has received over the years for his professional contributions. Few knew it, but Ed was the scientific spark plug of the whole synthetic rubber program in this country during World War II.

Carroll (Newt) Newton writes of his activities that "a reasonably busy schedule with considerable travel inhibits boredom." In April, he and his wife, Fran, spent a long week end with friends cruising and deep-sea fishing in the Gulf of California. In May and June, the Newtons plan to spend a couple of weeks in Colorado, Wyoming, and Utah looking into flood control features along the stream courses of the upper-Colorado basin. Newt adds that this trip could also imply a little trout fishing. In spite of all the traveling, we imagine that missile base construction and professional society activities also demand a good bit of Newt's time.

Word from Ellis Littmann indicates that he is commuting from his home town of St. Louis to various parts of Florida and the Bahamas. One of the staunchest supporters of '33, Ellis has come up with an idea for a company-sponsored scholarship that will make it possible for several able young men of limited resources to have an M.I.T. education.

Several of our cohorts are playing significant roles on their local scenes: Garb Garbarino, a new Vice-president of the M.I.T. Club of New York; Fred Murphy, who will head the United Fund Campaign in Attleboro this fall (Fred helps with an impressive list of worthwhile community enterprises); Bob Heggie, who chaired a panel on Technical and Economic Food Horizons at the New York M.I.T. Club last spring; and Andy Regan, who is now an Educational Counselor in Kingsport, Tenn.

As we go to press, we hear from Jim Vicary that his son, Tom, has decided to enter M.I.T. in the freshman class this fall. Congratulations to the Vicarys!

Ice melted? Well, after you fix your second drink, sit down and write your Secretary about your pursuits. Any children going to college? Any marriages? Any grandchildren? Feeling old? Cheers. — R. M. KIMBALL, *Secretary*, Room 3-234, M.I.T., Cambridge 39, Mass.

1934

H. E. Lobdell¹⁷ forwarded to me an interesting letter he received from Robert Cushman⁰⁶. Bob, who is now living in Portland, Ore., writes that since his retirement his time has been taken up with many hobbies. Among these are adding to his collection of pictures of sailing vessels which seem interesting from the design and engineering standpoint. His main reason for the letter is to bring to our attention a book by William A. Baker, naval architect and designer of the second *Mayflower*, the ship that attracted such world-wide attention

on its voyage last summer from England to this country. Bill tells about her design and construction. He has done his own illustrations and has made available for the first time four sheets of plans that have been specially redrawn for model builders.

Robert H. Boden, project engineer, advanced design section, on the ion rocket engineer research program at Rocketdyne, North American Aviation, Inc., is the author of an article entitled "Ion Rocket Engine Systems — A Summary," which appeared in the April, 1959, issue of *Aero/Space Engineering*. A short article entitled "Addendum Remarks on a Diode Configuration of a Thermo-Electron Engine" by Wayne B. Nottingham, George N. Hatsopoulos⁴⁹, and Joseph Kaye appeared in the March, 1959, issue of the *Journal of Applied Physics*.

Jacob J. Jaeger was awarded the 1959 Engineering Citation by the American Society of Tool Engineers. Part of the program at the American Institute of Electrical Engineers' winter general meeting in New York last February was the presentation of a paper by C. A. Tudbury entitled "Electric and Magnetic Conditions Inside an Induction Heated Workpiece." Chester is with the New Rochelle Tool Corporation. — JOHN A. HRONES. *Secretaries*: WALTER MCKAY, Room 33-217, M.I.T.; MALCOLM S. STEVENS, Room 1-139, M.I.T., Cambridge 39, Mass.; JOHN A. HRONES, Vice-president for Academic Affairs, Case Institute of Technology, University Circle, Cleveland 6, Ohio.

1936

This is the final installment of the notes for the present year — and we might add that it is well timed as we are fresh out of material. To those who have contributed to the news we say "many thanks"; to those who didn't, and particularly those who promised and didn't, we hope your conscience will eventually get you, a piece of paper, pencil, and a stamp, together. We look forward to receiving news straight through the summer; it will give us a little more to work with and make the notes more enjoyable for all. Beer- and coffee-stained bits of paper are most welcome as long as the news gets to us. Don't bother to type it or even think twice about the wording. Scratch it out hurriedly and send it in now. We will take care of the rest. If you can include information on other members of the class so much the better.

In the June installment of the notes we mentioned a get-together we had here at the M.I.T. Club of New York on the occasion of Brent Lowe's visit to Manhattan. More recently we did the same when Vince Estabrook came to the big town. Al Gray, Henry McGrath, Tony Hittl, Vince, and yours truly had a most enjoyable lunch at the club. These hastily arranged luncheons have proven so successful that the New York group would like to encourage any members of the class coming to New York City to let us know in advance and we will organize a luncheon at the club (Biltmore Hotel, Madison Avenue and 43d Street, first floor) and buy you a drink. We will do

our very best to get as many as possible of the local boys to turn out. We sincerely hope you will do this as it gives us a chance to see old friends, and a wonderful excuse to take a long lunch hour. Just drop a card to Jack Austin, Time Inc., 9 Rockefeller Plaza, New York 20, New York (telephone JU 6-1212) or Tony Hittl at Union Carbide Corporation, 30 East 42nd Street, New York (telephone MU 7-8000) or to your scribe. We are so enthusiastic about this thing that a standard operating procedure has been established whereby all arrangements will be taken care of even if the person you write to is out of town at the time.

Henry Johnson is now in business at his own stand. Henry went on to Harvard Law after leaving school and practiced law in Boston until he joined the Army Signal Corps and served for five years. He was chairman of the Corps' purchase committee and a member of its technical committee in Washington, D.C. He was also a member of the Navy Electronics Committee and a liaison officer with the Office of Scientific Research and Development and the War Production Board. For the next five years he was associated with the Philco Corporation in Philadelphia, serving as purchasing agent and then as manager of the planning department on the staff of the Ford Motor Company in Dearborn; a year later he was named controller of the engineering division, a post he held for the past six years.

The company Henry purchased is Phil Wood Industries of Windsor, Ontario, Canada. It is the largest manufacturer of hydraulic hoists and dump bodies in the British Empire. It was founded in 1919 as a Canadian division of Gar Wood Industries. With its manufacturing operations and headquarters in Windsor, the company sells its products through 27 independent distributors located in principal centers throughout Canada. Henry's home address is Quarton Road, Bloomfield Hills, Mich.

John Calhoun was recently made a group leader in the rayon research division of Industrial Rayon Corporation, Cleveland, Ohio. After leaving the Institute, John attended Cleveland Marshall Law School where he earned a law degree. He joined Industrial Rayon in a research capacity in 1948.

Harry Easton has been named operations manager of the Walter Baker Chocolate plant of General Foods Corporation in Dorchester, Mass. Harry joined the company in 1936 at the Post Cereals plant, and subsequently became works manager of G. F.'s English subsidiary, Alfred Bird and Sons, Ltd. Since 1949, he has been with the company's Franklin Baker unit, most recently as operations manager. Harry has moved from Hawthorth, N.J., but to date all we have is his business address: Walter Baker Chocolate, General Foods Corporation, Pierce Square, Dorchester 24, Mass.

Henry Wilsey has been given the Silver Beaver award by the Eagle Rock (New Jersey) Council, Boy Scouts of America.

Pylam Williams' new address is Box 257, Montville, Conn. Scott Rethorst moved 30 numbers up the street. He is now at 587 Drexel Place, Pasadena, Calif.

John Zietlow's new location is at 2699 Clifton Avenue, Cincinnati 20, Ohio. Ladislav Reday has moved to 2449 Orange Avenue, Costa Mesa, Calif. Leonard Cohen has left Texas for Kansas, 5178 East Harry, Wichita 18, Kansas. Charlie Kennedy can be reached at 1021 East Water Street, Elmira, N.Y. Fred MacDonald's new address is 65 Avalon Road, Milton 87, Mass. Franklin Cooper is in Westport Conn., 5 Parsell Lane. Dave MacAdam can be reached at 68 Hammond Street, Rochester 15, N.Y. — JIM LEARY, *Secretary*, One Putnam Park, Greenwich, Conn.

1937

Our class President, Phil Peters, reports that he has done more traveling than ever these last few months, ranging from Florida through New Orleans to the West Coast, but he has not had many opportunities to visit with classmates. Perhaps the most frequent contacts he has are with Tom Kinraide and Ralph Webster. His last meeting with Tom Kinraide was when they both ran into one another climbing and skiing with their respective families in Tuckerman's Ravine. Phil says that Ralph also is an ardent skier and spent several weeks last winter covering the Aspen, Colo., and Sun Valley, Idaho, ski areas.

Joe Heal also reports: "I just received a nice note from John Fellouris with a nice yearly pledge through 1962 for the class gift. His wife just returned from the hospital after recuperating from a ruptured disk. We certainly wish her the best of luck for a speedy recovery. John sends his warmest regards and especially to the Course I boys. At the end of 1958 I heard from Archie Ahmadjian, who was just completing the installation of a refinery in Germany. Louise, the family, and Archie took every possible opportunity to travel and saw a great deal of the Continent. Marion and I were lucky to be able to get together with the Ahmadjians in Whitinsville for lunch. Archie and Lou have decided to settle down on the East Coast and give up his job with C. F. Braun Co. They have been moving on the average of once every year or two since they have been married. I recently heard from him and he has a job in New Jersey in charge of 30 or more engineers. His address will be 178 Prospect Street, Ramsey, N.J., after May 1. Good luck, Archie.

"Archie gave me some rather disturbing information when we were chatting. He said that several months ago Alden Acker was coming in for a landing in a private plane and overshot the field. Al was badly hurt and will be in the hospital for many months. I'm sure he'd like to hear from you. His home address is 3330 Vosburg Street, Pasadena, Calif. Ralph and Sanna Chapin returned in February from a trip overseas to visit their children, who are studying abroad."

Bill Austin has just been elected president of the Connecticut Building Congress. Upon graduation from M.I.T. Bill started in air conditioning as a sales and service representative with York Ice Machinery Corporation. After two and one-half years, he joined Westinghouse Spe-

cial Products Division in Bloomfield, N.J. He was commissioned as a lieutenant (j.g.) in the Ordnance Department of the Navy, becoming a torpedo officer after training at Fort Schuyler, San Diego repair base, and at the bureau in Washington, D.C. He served at Dutch Harbor, Alaska, for 18 months and as a lieutenant at San Diego until his release to inactive duty. His postwar work includes development work at United American Soda Fountain Company, Bath Iron Works Manufacturing Corporation, and as engineer for Cox Engineering Company. After this, he spent three years in private practice in Boston designing and supervising mechanical systems for schools, hospitals, stores, and plants in and around Boston. In 1951 Bill went to Connecticut as engineer for C. N. Flagg Company in Meriden, where he supervised installations of heating, air conditioning, petroleum, sprinkler, and specialized piping systems in Connecticut, New York, and Pennsylvania. Since then, he has been in practice as a consultant specializing in industrial buildings and plants with Austin and Warner — known as William H. Austin and Associates. He has been president of New Haven chapter, Connecticut Society of Professional Engineers, and northeastern representative for functional section of National Society of Professional Engineers. Three years ago, he started the Future Engineers of America, an organization to promote engineering among high school students. Bill was born in Boston, educated in Boston parochial schools and then at M.I.T. He is a member of American Society of Heating and Air Conditioning Engineers, Connecticut Society of Professional Engineers, the National Society of Professional Engineers, and the American Institute of Plant Engineers; he was just retired as secretary of Cheshire Development and Industrial Commission. He is registered as a professional engineer in Connecticut, Massachusetts, New York, New Hampshire, Rhode Island, and Maine. In Connecticut, he is licensed as a real estate broker. Although he lives in Cheshire, Conn., with his wife Margaret and his two sons, Bill and Peter, he enjoys sailing a Lightning at Sachem's Head Yacht Club where, he admits, his sons do a better job of racing than he does. (They win the prizes.)

Raymond Webster has recently been named chief engineer of the Willingboro Municipal Utilities Authority, Levittown, N.J. Dr. Charles E. Reed has also just been appointed general manager of the General Electric Metallurgical Products Department in Detroit.

As this issue goes to press in May, there is every reason to believe Alumni Day will be outstanding, incorporating as it does the inauguration of Dr. Stratton. I know those of you who attended had a fine time for yourselves, and a full report will follow in our opening issue in the fall. Once again, we thank you for your many notes, letters, and cards that you sent along this year.

Have a happy summer and drop a line or card while relaxing on your vacation. — ROBERT H. THORSON, *Secretary*, 506 Riverside Avenue, Medford, Mass. S.

CURTIS POWELL, *Assistant Secretary*, Room 5-323, M.I.T., Cambridge, Mass. JEROME E. SALNY, *Assistant Secretary*, Egbert Hill, Morristown, N.J.

1940

Several additional members of the Class have joined the growing list of authors. Rap Rapoport is the author of a new laboratory textbook in organic chemistry which has been published by Prentice Hall, Inc., and Dave Hoisington is the author of *Nucleonics Fundamentals*, published by McGraw-Hill.

Walter Brewer has joined Space Technology Laboratories, Inc., in Los Angeles, Calif., as associate manager of the Airborne Systems and Test Department, Atlas Program Office. Walter previously was connected with the Cornell Aeronautical Laboratory for 14 years.

The space age has also attracted another classmate. Frank Denison has been appointed manager of vehicle technology of the Space Technology Division, Aeronutronic Systems, Inc., of Newport Beach, Calif.

At the American Institute of Electrical Engineers' meeting last February, Ralph Kochenburger was a panel member on the topic "Automation in the Soviet Union."

This closes the '40 notes for another year of The Review. We will be back in the fall with information in regard to our 20th reunion coming up in June, 1960. In the meantime, enjoy your vacations and don't forget, drop a line to Al. — ALVIN GUTTAG, *Secretary*, Cushman, Darby, and Cushman, American Security Building, Washington 5, D.C. SAMUEL A. GOLDBLITH, *Assistant Secretary*, Department of Food Technology, Room 16-325, M.I.T., Cambridge, Mass. MARSHALL D. MCCUEN, *Assistant Secretary*, 4414 Broadway, Indianapolis 5, Ind.

1941

Mitch Marcus reports that the spring get-together of the Boston section ("18th reunion") was, as always, a very successful event. "We had a marvelous time, due mainly to the fine attendance and the guest speaker who was extremely interesting and informative. He was Mr. Alexander Korol, who is associated with the Institute as a research political scientist and economist. He was born in Irkutsk, Siberia, and came to this country in 1923 to pursue his studies and receive his degrees. He spoke to us concerning the comparison between Soviet and American education, and presented some rather startling and informative facts. Basically as a result of his talk and the extensive question period which followed, I think we all were made aware of the fact that our educational system is not as bad as the press might make it seem; and that, although we certainly should not shirk our responsibilities, on the whole we are doing a pretty good job. Those attending, most of them with their wives were Howie Morrison, Ed Beaupre, Reid Weedon, Irv Stein, John Macleod, Johan Andersen, Frank Johnson, Mitch Marcus, Ed Marden, George Hite, Bob Alfred, Dick Gould, Tony

Fiorentini, Charlie Sauer, Mike Driscoll, Bud Ackerson, John Sexton, and Dave Howard." Mitch also tells us that his brother Herbert'48 has become a partner in Production Systems, Inc., so that their consulting work can be expanded. They are active in the fields of plant surveys, time and motion studies, production control systems, materials handling systems, conveyorization, machine design, and management consultation.

Lew Fykse became director of marketing for Associated Spring Corporation, Bristol, Conn., on April 1. Lew will be responsible for all sales, market research, and advertising activities of the corporation and its 12 operating divisions. Following service in the Air Force, Lew was with the Standard Tool Company, starting as assistant production control supervisor and rising to vice-president in charge of engineering. From 1953 to 1955 he was vice-president of sales for the Cleveland Hardware and Forging Company; he then became manager of the Methods Department and assistant director of marketing of Harris-Intertype Corporation; and immediately prior to assuming his new post, he was marketing services manager for American Machine and Foundry Company.

Buster Rudd has been named plant manager of the Allegheny Electronic Chemicals Company, Bradford, Pa. The company produces silicon in all forms for the semiconductor industry. Previously, Buster had been process engineering head of the Plastics Division of Celanese Corporation of America, and technical superintendent of their Houston, Texas, and Belvidere, N.J., plants.

Irv Koss has been appointed manager of Motorola's Microwave Department. A graduate of the Harvard Business School, Irv joined Motorola in 1955 as administrative assistant to the executive vice-president; in 1956, he was appointed director of marketing for the communications and industrial electronics division. Irv's headquarters are in Chicago.

Some of you non-New-Englanders may not have heard of CONSIT; it's the Committee to Oppose Non-resident State Income Taxes, made up largely of New Hampshire residents working in Massachusetts who object to the Bay State's income tax. One New Hampshire man spent a week in the Charles Street jail in Boston rather than pay. Equally direct in his approach, but much less confined as a result, is Ed Beaupre, who has become assistant to the vice-president, operations, at Sanders Associates, Inc., Nashua, N.H. Ed was previously assistant to the president and director of operations for the Military Division, Electronics Corporation of America, in Cambridge. Ed has lived in Nashua all along, even though working in or near Boston for a good many years.

Les Klein has been appointed vice-president of Nuclear Metals, Inc., of Concord, Mass. He was formerly manager of the New Developments Division and assistant technical director. He has served in a staff capacity since the firm's beginning in 1954, and with its predecessor, the M.I.T. Metallurgical Project, since 1948. Prior to that, he was with Jessop Steel Company, Washington, Pa. Control

of Nuclear Metals has recently been acquired by Textron, Inc., bringing to 18 the number of firms in the Textron organization. Nuclear Metals is an outgrowth of the M.I.T. Metallurgical Project, which was organized in 1942 to work on the technology of new materials such as uranium and beryllium for the atomic energy program. The firm now employs 275 people and is the country's largest privately owned metallurgical research facility; it is engaged in the development of nuclear fuel elements, improved metals, alloys, cermets and ceramics, and new methods of fabrication.

To all you worthies in your new positions, lots of luck; to others who haven't been mentioned, let's hear from you. Don't let modesty hide your light under a bushel: any and all position changes are noteworthy and of interest to the readers of the column.

Active in the American Institute of Electrical Engineers winter general meeting in New York were Bob Fano of M.I.T., who participated in a panel discussion and presentation on communications in space, and George Newton, also of M.I.T., who was chairman of a panel on automation in the Soviet Union. Presenting papers at the annual meeting of the American Meteorological Society were Bob Bailey of Eastern Air Lines, "Forecasting of Heavy Snowstorms Associated with Major Cyclones"; Joseph Levine of the Woods Hole Oceanographic Institution, "Recent Advances in Cumulus Cloud Dynamics"; and Jerome Namiias of the U. S. Weather Bureau, "Recent Seasonal Interactions between North Pacific Waters and the Overlying Atmospheric Circulation."

Thus ends another year of the class notes; we'll be back here in the fall. Remember that letters, cards, carrier pigeons, or anything, are welcome any time. I've never had more material than I could use! While you're writing, remember your dues; two dollars in check, coin, green stamps, or what have you. A pleasant summer to all from — IVOR W. COLLINS, JR., *Secretary*, 9 Sunnyside Drive, Dalton, Mass., and HENRY AVERY, *Assistant Secretary*, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

1942

Jerome T. Coe has been named general manager of General Electric Company's Silicone Products Department at Waterford, N.Y. In his new position Jerry has the responsibility for the operations of one of G.E.'s fastest growing departments. It manufactures basic silicone materials — rubber, resins, fluids, and emulsions. Because of such properties as resistance to extremely high or low temperatures, excellent electrical properties, and water repellency, silicones are used in missiles, jet aircraft, electrical apparatus, and a wide variety of military and industrial applications. Some of the consumer applications are improved auto and furniture polish, cosmetics, paint, fabric finishes (and the bouncing putty Jerry distributed at our 10th reunion). The Coe family includes Peggy and three children, residents of Schenectady and members of

the First Reformed Church. Jerry is a member of the American Chemical Society, the American Institute of Chemical Engineers, the Commercial Chemical Development Association, and the Chemist's Club of New York. All of the above leaves very little time for the Mohawk Golf Club.

Robert W. Seavey, chief process engineer of M and C Nuclear Company of Attleboro, Mass., was recently elected to the Raynham School Committee after an uphill campaign as a write-in candidate. Bob previously served on the school committee from 1953 to 1956 and is presently a member of the town planning board. The professionals acknowledge that winning a sticker campaign is rare indeed particularly when opposed by two town old-timers. My note to Bob brought forth the following additional news: "We have been living here in Raynham since 1951 when we bought and restored our 198-year-old center chimney colonial. At that time I was chief engineer for Paragon Gear Works. My present company manufactures nuclear fuel and reactor cores. Small town life has been pleasant and the semi-rural surroundings have been a good environment for our three growing daughters, Diane, Martha, and Beverly. It is satisfying to be able to have a visible influence on the character of the town as it develops. At the same time we are very near Taunton and really not very far from Boston and Providence, so that we have access to many of the advantages of a big city."

The Vitro Corporation Laboratories have announced that Charles K. Raynsford has been named chief engineer. Charles served as a captain with the U.S. Army Signal Corps and engaged in radar and biological warfare activities. His technical work during the past 15 years has been in the fields of timing control and data processing systems. He has rendered staff assistance in the Polaris missile program. Charles, his wife and five children have a home on Clearwater Drive in Summit, N.J. Vitro Corporation has also announced the promotion of John F. Reeves to head of the Systems Analysis Department. John was associated with the M.I.T. Servomechanisms Laboratory from graduation until 1946. The following seven years were spent with the M. W. Kellogg Company in organizing and supervising a laboratory which developed electrical controls for missile engines, navigation analog computers, and industrial controls. John's activities with Vitro since 1953 have been in missile systems, countermeasures, timing equipment, and data handling instrumentation. John is a member of the American Institute of Electrical Engineers, the Scientific Research Association of America, and the Institute of Radio Engineers. Mr. and Mrs. Reeves and their three children are residents of Tottenville, N.Y.

From Baytown, Texas, we received a delightful letter. Ted Eliot writes: "Have just returned from the 11th Fiesta in Mexico City, where we had a real big time — met one of our classmates there, Erwin Anisz. Anisz is quite a playboy — polo and all. We took a week off and toured Taxco and Acapulco. I strongly

recommend the Fiesta for anyone up there. Have discovered there are several classmates here. Ed Yoder is with Car-bide in Texas City — just returned from a stay in southern Italy. He reports that it was a 'good year's vacation.' Bill Wilcox and Bill Strong are with Du Pont at La Porte (near Baytown). Both have been with Du Pont since the war and Strong has been here seven years. Wilcox is production superintendent and Strong is a department head under him."

Robert T. Benware of Los Altos, Calif., has been appointed chief engineer of equipment engineering in Philco's Western Development Laboratories in Palo Alto. In his new position Bob will be directing design, development, and fabrication of electronic and electro-mechanical equipment. Bob and Betty are natives of Newport, Vt. Their family includes Bonnie, 15; Barry, 11; Betsy, 8; and Barbara, 2 years of age. Bob's previous duties with Philco in the east included manager of radar systems engineering, studies of missile detecting radar systems, and the design of microwave components and antennas. He is a senior member of the Institute of Radio Engineers.

Edward O. Vetter has been elected executive vice-president of Metals and Controls of Attleboro, Mass. Ed was previously an assistant vice-president of Texas Instruments, Inc. The two companies have recently merged. As executive vice-president Ed is responsible for the General Plate, Spencer, Versailles products and international divisions and for most central staff activities. He completed World War II service as an army major and then spent four years with Standard Oil of California as assistant manager, Organization and Cost Control Division. He joined Geophysical Service Inc., oil exploration subsidiary of Texas Instruments, in 1952 as controller. After promotions to assistant vice-president and vice-president-administration, he was transferred in 1957 to Texas Instruments as general manager of the Industrial Division.

The whole Class joins in congratulations, best wishes, and good luck to those above in their accomplishments and their new responsibilities. We know that they will do even more outstanding work in the future, and we look forward to reporting their achievements in these columns.

Summer has arrived in searing suddenness. We all wish you good time, good tans, and not too many sets of tennis at one time on hot days. Alas, even we must now slow up just a little. More in the fall. — *Secretaries:* BOB KEATING, J. J. QUINN, ED EDMUNDS, and LOU ROSENBLUM, 49 Farnham Street, Belmont 78, Mass.

1943

At this time of year, when some of us are celebrating our 20th reunions at our high schools or preparatory schools, you may wonder why no other M.I.T. classes are using our 15th reunion site this year. It appears that the Royal Magansett Hotel at North Falmouth went into receivership. Jim Hoey sent in a clipping

announcing the receiver's sale at public auction, which was to have taken place on April 25. I also received a similar clipping all the way from Dallas, Texas, from Bob Lichten, who expressed hopes that we'll be back at the Mayflower Hotel in 1963. Bob was heading for the Paris Air Show, with Sue, in June, where he was to present a paper to the International Rotary-Wing Congress. On May 8 Bob received the Klemm Award of the American Helicopter Society in Washington for his part in the development of the Bell XU-3 Convertiplane.

Bob Handelman and Eileen Tannenbaum were married on February 22 in Maplewood, N.J. Mrs. Handelman received her B.A. and M.A. degrees from Mt. Holyoke College, where she was awarded the Skinner fellowship for graduate work in chemistry. She received her Ph.D. degree at the University of California, and did postdoctoral work at the University of Copenhagen. She is a research physicist at Bell Telephone. Bob is assistant chief electrical engineer at the Engineering Division of the Kear Fott Company, Inc., in Clifton, N.J. Ben Parran has been promoted to program administrator at the Ordnance Department of General Electric in Pittsfield. He has been with G.E. since 1951; prior to that he was with the United Shoe Machinery Corporation, where he did development engineering on servo controls for automatic machinery and chemical processes.

Charlie Hathaway was appointed director of engineering of the Air Impeller Division of the Torrington Manufacturing Company in Torrington, Conn. Prior to his joining Torrington in 1950, Charlie was with the Perfex Corporation and then the Sharples Corporation as a research and development engineer. I've visited Charlie's company a few times in the past years, and have always enjoyed his gracious hospitality. Under his direction as chief engineer the department he heads expanded to 42 full-time personnel; and they have the most complete proprietary air impeller testing facilities, including a unique sound laboratory.

We are attempting to split up the secretarial duties of the class by regions, so that the communications will be more provincial. Feel free to write to or call on Chris Matthew in San Francisco, and Jack McDonough in Chicago. Dick Feingold hasn't missed a reunion in Cambridge for over 10 years, and has been able to pick up news first hand every June. All of us enjoy your news and letters, so write often.

A final item, just before we go to press, was received in the form of a post card from Havana, Cuba, showing a picture of the Habana Hilton, with the following message, signed by Gus Calleja and Angel A. DelValle and their wives: "Abrazos desde este exquisito rincón del mundo de tus dos classmates." If someone will donate a translation, we'll print it. — *RICHARD M. FEINGOLD, Secretary*, 49 Pearl Street, Hartford 3, Conn. *Assistant Secretaries:* CHRISTIAN J. MATTHEW, A. D. Little, Inc., 314 Battery Street, San Francisco, Calif.; JOHN W. McDONOUGH, JR., R.R. #1, Donwood Drive, Naperville, Ill.

This is the last issue until November. If you have not corresponded with us in the last year, please take pen in hand and do it now. The deadline for the November article is only a month or so away from the time you read this.

Don Burke writes to say he was promoted from service co-ordinator of Allied Products to plant manager of Allied Products Manufacturing Company, Inc., of St. Petersburg, Fla. His company makes awning windows; jalousies; screen patio enclosures; and a new product, window walls. Don recently completed his "Florida living" house at 1818 Caesar Way South, St. Petersburg. Don is married and has three children. Frank V. McCarthy earned his A.B. in English at Tufts in 1949 and his M.S. at the Graduate School of Journalism at Columbia in 1952. Since then he has been with the *Berkshire Eagle*. Frank is in charge of the Lee bureau of the paper, and he makes his home at 244 Main Street, Lee, Mass. He is married and has one daughter.

Edward J. Bacon is with Emerson Research Laboratories in Washington, D.C., engaged in the development of electronic ordnance radar altimeters, guided missile fuses, and the like. He joined Emerson in 1956 and has been section chief of the Armaments Department since 1957. The Bacons live at Watts Branch Drive, Rockville, Md. Colin A. Roberts is assistant vice-president and engineer of Manufacturers Mutual Fire Insurance Company of Providence, R.I. He is chairman of the Barrington, R.I., School Committee and a member of the building committee for a new cancer hospital. The Roberts live at 50 Clarke Road, Barrington.

Juan Jose Re is chief engineer at the Rosario plant and member of the board of directors of the parent company, Acindar, Industria Argentina de Aceros S.A. His Rosario plant is a steel mill with two open-hearth furnaces, a blooming mill, and a bar mill; and it produces 70,000 tons per year of finished products. From June, 1946, through March, 1958, he combined his steel mill job with being professor of electrical machinery at the Universidad Nacional del Litoral, Rosario, Santa Fe. Juan is married and lives at Boulevard Avellaneda 1035 Bis, Rosario de Santa Fe, Argentina.

José M. Corbella is professor of chemistry, head of the Chemical Department, and recently appointed vice-principal of St. Xavier's College, Cruickshank Road, Bombay 1, India. Herbert W. Oedel is assistant to the president of Spir-it, Inc., a small company (40 employees) engaged in injection molding. His company is the largest and original manufacturer of drink stirrers (which gives me a thought, Herb: perhaps you can gather together a pile of exotic but reject drink stirrers to be used as give-away gifts at our next reunion). Herb has two boys and lives at 166 Upham Street, Melrose, Mass. David F. Moyer has his own consulting engineering business in Dayton, Ohio, specializing in measurement and controls. In October, 1958, he presented a paper to the American Heart Association in San Francisco on "Acoustical Analysis of Coronary Blood Flow." Dave has four children now

and lives at 94 Patterson Road, Dayton, Ohio. Howard Auerwald is president and treasurer of Tubed Chemicals Corporation, Easthampton, Mass. His company specializes in contract packaging of many types of containers and also vacuum forming and special packaging with plastic films. Howard lives at 65 Rogers Avenue, West Springfield, Mass.

Sigurdur Halldorsson lives at Nök-kvavog 22, Reykjavik, Iceland. He has chronicled his recent doings and I will quote directly from his note: "After graduation I returned to Iceland. I taught high school math and chemistry one winter, then returned to the U.S., to the University of Illinois, and got my master's degree there in 1948. Got a job with the Icelandic Post and Telegraph Administration on my return here. Was one of three division heads, in charge of outside plant, toll lines, and so forth, when I resigned in 1954. Got a job with a contracting firm doing work for the U. S. Forces at Keflavik Airport. Stayed with them until last year. Was their chief engineer for a while, and chief estimator at times.

"Anyway, I got fed up with Keflavik Airport, and am since last fall a consulting engineer. I also do import business on a commission basis. Do occasional estimates for the Keflavik Airport crowd. Design electrical installations for local buildings. Anything I can do for you? Got married in 1946 and now have three boys and two girls." Richard J. Steele has been transferred from the Chicago office to the Los Angeles office of George Fry and Associates, management consultants, and has recently been appointed assistant director, Western Division. Prior to joining Fry he earned his master's in business administration degree from Indiana University. Dick now has five children, the latest, Dick Jr., having been born last September. The Steeles now make their home at 15519 Talbot Drive, La Mirada, Calif.

That is it for this year. If anyone has sent me information about himself and hasn't seen it reported in these notes, then either the U.S. mail or my negligence should be blamed because I am fresh out of news. So again, please sit down right now and drop me a line. — JOHN A. MAYNARD, *Secretary*, 15 Cabot Street, Winchester, Mass.

1947

Here it is summer again! All of you who attended the Alumni Day activities, along with the inauguration of President Stratton, must have indelible memories of the event. Your correspondent was not able to attend, due to the pressures of business, and the distance from the West Coast, but his thoughts were with you fortunate ones who were present.

News from the class is rather sparse this month. Claude Brenner's circular letter leaves little upon which to elaborate, except to repeat his request for participation in the Alumni Fund. Although the 1959 Fund Drive ceases in July, the 1960 Alumni Fund starts as soon as the previous year's solicitation is complete. May I urge all of you to participate in the 1960 Alumni Fund, particularly for

the welfare of the Institute, and incidentally to indicate your class loyalty.

Remington Rand has recently appointed James R. Weiner as assistant vice-president, Univac Engineering, at their Univac Headquarters in Philadelphia. Melvin Salvesson has been elected president of The Institute for Management Sciences, located in New York. Herbert S. Brown, Jr., who completed a two year advanced degree course in 1947, has been appointed to a newly established post at Sikorsky Aircraft in Bridgeport. He has been named supervisor of project and flight operations. Harold Brown (no relation to Herbert), was recently named vice-president of the Walworth Company, manufacturers of valves and pipe fittings. Arthur M. Spiro, recipient of an M.S. in textile engineering, has joined Waumbec Mills, of Manchester, N.H., as vice-president, with his office being located in New York. Norman B. King is now with the Badger Manufacturing Company in Cambridge, as a process engineer. The Raytheon Manufacturing Company has named four assistant managers in their research division, one of whom is a classmate, Hugh R. Boyd. For the past five years, Hugh has been technical assistant to the division manager, and now will be responsible for administration in the entire research division.

Bernard D. Cullity, a graduate member of the class, was the author of an article on metal crystals, which appeared in a recent issue of *Scientific American*. Recent address changes as follows: Arizona, Tucson, Arthur M. Ross. California, Sacramento, Richard L. Hoff. Delaware, New Castle, Harold Fernandes. D.C., Washington, Dr. Norman L. Brown. Massachusetts, Westwood, Professor J. A. Nordstrom. Michigan, Detroit, Harry S. Laventhal. New Jersey, Montville, Richard R. Blews; Murray Hill, William Archibald; New Providence, William A. Rangnow. New York, New York, Melville W. Ackerman; Poestenkill, James G. Moir, Jr.; Ransomville, John D. Ireland; White Plains, Dr. Donald L. Thomsen, Jr. Pennsylvania, Palmerton, Dr. Wilfred L. Freyberger; Philadelphia, Edwin R. Clarke; Pittsburgh, George W. Smith, Jr. Venezuela, Maiquetia, Commandore Armando Medina. Israel, Haifa, Moses Arens. Have a happy summer — ARTHUR SCHWARTZ, *Secretary*, 8355 Blackburn Avenue, Los Angeles, Calif.

1948

This issue of The Review is the last issue of the 1958-59 volume; and I hope it arrives in time for the many July vacationers to take with them, as it provides interesting entertainment while stretched out on the beach! Business promotions are always of interest, and in looking over my notes for this month I notice several changes have taken place.

Leonard Maier was recently appointed vice-president of marketing for defense products at the Crosley Division of the Avco Manufacturing Corporation in Cincinnati. Len was formerly manager of industrial and military tube operations of the Cathode Ray Department at the General Electric Company in Syracuse, N.Y. Another recent appointment was that of

R. F. Rogers, who was elected treasurer of the Polymer Corporation of Reading, Pa. Rogers joined the company in 1953 and was elected assistant treasurer in 1953 and secretary in 1957. He will assume full duties as treasurer of the company and will continue as secretary as well.

Milt Kamins has written from sunny California of his recent activities. He received a fellowship for advanced study at California Institute of Technology in Pasadena and got a degree in mechanical engineering in 1957, after which he became associated with the Rand Corporation Logistics Department. He spent the first 18 months working on problems associated with ballistic missile cryogenics and is currently working in the field of automation. Others from the Class whom he has seen there are Mark Campbell and Roger Sisson. Milt also brought us up to date on his marital status! On the day before our 10th reunion he was married in Los Angeles to the former Helen Stone, who was Professor Reissner's secretary in the Mathematics Department.

Included among new appointments to research advisory committees of the National Aeronautics and Space Administration is that of Dr. Stever (Missile and Spacecraft Aeronautics). With the N.A.S.A. announcement came the explanation that "Selection to committee membership is a recognition of top scientific and engineering talent in the fields of aeronautics and space technology. It is an excellent reflection on the high caliber scientists at M.I.T." We are certainly very familiar with their accomplishments and it is always gratifying to note the recognition they are continually receiving from outside the immediate college area.

While on the subject of recent appointments, I might mention that I have assumed a new position within Norton Company. On April 1, I assumed the title of assistant treasurer of Norton Behr-Manning Overseas, Inc., a subsidiary of Norton Company conducting world-wide export sales and overseas plant management.

Several members of the Class participated in the 39th annual meeting of the American Meteorological Society at the Barbizon-Plaza Hotel, New York City, early in 1959. Lester Machta, associated with the U.S. Weather Bureau in Washington, gave a paper "On the Possibilities of Studying Large-Scale Meteorological Features Using Radioactivity." Louis Berkofsky⁵⁴ and Ralph Shapiro of the Geophysics Research Directorate, Air Force Cambridge Research Center in Bedford, Mass., gave a paper on "Investigation of Upper Atmospheric Heating Effects by Means of a Dynamical Model." In collaboration with others, Dick Schotland of the Department of Meteorology and Oceanography, New York University, presented a paper on "The Effect of Atmospheric Pressure on Water Drop Coalescence." Gene Larabee of the Department of Aeronautical Engineering at Tech and Sidney Lees of United Research, Inc., in Cambridge, also gave a paper on "The Use of Aerodynamic Probes to Measure Wind Shear." Our Class is certainly well represented.

A talk was given recently in Greenfield by John Lebourveau on working conditions in an atomic power plant and the problems of radioactive fallout. John graduated from Worcester Polytechnic Institute and earned his master's degree in business administration from M.I.T. He has been employed with the Yankee Atomic Electric Company since 1947 and has had a variety of assignments since then, among them executive assistant, priorities assistant, and assistant engineer in economics of hydroelectric power. Since 1955 he has been engaged in engineering and electrical planning for the Yankee company's multi-million dollar power plant under construction in Rowe.

In the literary area, Bill Kingery authored a recent article appearing in the *Journal of Applied Physics* entitled "Densification During Sintering in the Presence of a Liquid Phase. I. Theory." Then he coauthored a second article on the experimental aspects of the problem. — **RICHARD H. HARRIS**, *Secretary*, 26 South Street, Grafton, Mass. *Assistant Secretaries*: **HARRY G. JONES**, 94 Oregon Avenue, Bronxville 8, N.Y.; **HERBERT KINDLER**, 128 Elatan Drive, Pittsburgh 16, Pa.; **ROBERT R. MOTT**, Box 113, Hebron, Maine.

1949

Dr. Josiah Macy, Jr., who received his Ph.D. at Tech, is now a mathematical biophysicist at the Operations Research Office, Johns Hopkins University, studying the effect of stress on the human nervous system. Boston College has announced the promotion of Joseph Bornstein to professor of chemistry. An alumnus of Boston College in 1941, John earned his Ph.D. at M.I.T. in 1949. Ted Madden has been awarded an Atomic Energy Commission contract for work at Tech on problems of induced polarization properties of rocks and their causes.

The Reverend James J. Devlin, S.J., of Boston College has been elected secretary of the newly formed Society for Applied Spectroscopy. S.A.S. replaces the Federation of Spectroscopic Societies, which previously consisted of 18 independent societies throughout the U.S. — **O. SUMMERS HAGERMAN, JR.**, *Secretary*, 8519 Pringle Drive, Cincinnati 31, Ohio.

1950

Mrs. Cecily Cannan Selby has been named headmistress of the Lenox School, New York City. Mrs. Selby received her Ph.D. in physical biology at Tech in 1950 and has held teaching positions at M.I.T. and the Cornell Medical College; she taught science at the Lenox School during the 1957-58 academic year. Robert Plouffe, Jr., has been named associate laboratory director of the International Telephone and Telegraph Laboratories in Nutley, N.J. Bob joined the I.T.T. system in 1951; and prior to his promotion, he was engaged primarily on data processing projects. He is married to the former Lois Robey of Brockton, and Bob, Lois, and their two children are living in Livingston, N.J. Charles A. Church has been named assistant production manager of D. S. Kennedy and Company of Co-

hasset, Mass. Before assuming his new position, Charles was the chief methods engineer of the Draper Corporation in Hopedale, Mass.

Kenneth D. Garnjost has been appointed to the position of chief engineer for the Moog Valve Company, Inc., East Aurora, N.Y. Ken worked on development of electro-hydraulic aircraft flight control at the M.I.T. Instrumentation Laboratory in the early Fifties and joined Moog in 1954 as director of research, advancing to chief systems engineer and then to technical assistant to the president. George C. Krusen of Westboro, Mass., has joined the Process Development Department of the Dewey and Almy Chemical Division, W. R. Grace and Company, as development engineer. George was with the Bay State Abrasive Products Company and has also served with the Davison Chemical Division, W. R. Grace and Company.

A letter from Dave Gushee tells of his new assignment: "I have been transferred from the American Chemical Society West Coast editorial office to the Washington (home) office. New duties will be as technology editor for *Chemical and Engineering News*, responsible for form and content of all news coverage of matters scientific — as contrasted to matters industrial, such as expansions. Transfer effective June 8. Al Tate, also '50 and also Course X, has taken up a new position in San Francisco with Dean Witter and Company, investment brokers, as a research analyst. Al has been out here now about six months. On the personal side, my wife and I still have no children but the rest of that Princeton survey about guys 10 years out of school is about right—you know, the survey that said we are thickening through the middle, thinning at the top, getting satisfied to sit before the fire instead of going out howling, and all the rest of those signs of incipient aging."

A dynamic administrator who already has made his mark as a nuclear physicist will be Kansas State College's new dean of arts and sciences. He is Thomas M. Hahn, Jr., who since 1954 has been head of the Department of Physics at Virginia Polytechnic Institute, Blacksburg. Tom will assume his new duties next September 1, according to President James A. McCain, who announced the appointment. A native of Lexington, Ky., Tom was educated in the public schools of Lexington and Chicago, Ill., and returned to the University of Kentucky for his B.S. in physics, which he received in 1945. He later was a lecturer in physics at the Naval Academy, a physicist at the United States Naval Ordnance Laboratory, and a research assistant at M.I.T. before receiving his Ph.D. in physics from M.I.T. in 1950. From 1950 to 1954 Hahn was director of graduate study in physics and director of nuclear accelerator laboratories at the University of Kentucky. The new Kansas State dean has had numerous research articles published in technical journals for physicists. Most of his work has been with high voltage accelerators, and he has made many studies on distribution of gamma rays from various nuclear reactions. He is international editor for *Nuclear Energy*

Engineer, and has been a consultant to Reynolds Metals Company, Leeds and Northrup Company, the Atomic Energy Commission, and the University of Puerto Rico. Tom is married and has three children.

General Radio Company announced the assignment of Frank J. Finnegan to their Washington, D.C., district sales office effective April 1, 1959. Frank has been with General Radio Company at its home office since February, 1958. Before this time, he was project manager for Multiple Diode Engineering Department of Raytheon Manufacturing Company, in which position he had administrative responsibility for direction of operations of this department and supporting engineering personnel. Just prior to his assignment to Washington, he represented General Radio at Gentile Air Force Base, Dayton, Ohio, where he took part in an Air Force calibration program which is to precede the establishment of base test-equipment calibration shops throughout the world.

Two of our fellow classmates who are professors at Tech are winners of 1959 Guggenheim fellowship awards: Dr. Karl Uno Ingard, for studies in fluid and plasma physics; and Dr. Louis S. Osborne for studies in high energy physics.

Charles D. Fulton, Jr., writes from Cincinnati: "After teaching at Duke University for seven years, I came to the Aircraft Nuclear Propulsion Department of the General Electric Company here in Cincinnati a year ago. I was with G. E. in Schenectady before going to the M.I.T. graduate school in 1947. Walter J. Gailus is also now in this department after having built Vanguard rocket motors next door. We were recruited by the winsome William C. Cooley, who, after seven years here, has now gone to California with North American Aviation in a high position on Project Rover, the nuclear rocket. All three of us received our doctorates in mechanical engineering at M.I.T. in 1950, and Bill was my roommate. There are many M.I.T. Alumni among the 15,000 people G. E. now has in its four Cincinnati departments. They all seem to distinguish themselves. Don Berkey (S.M. in '43 I think) is now general manager of the Jet Engine Department. Eleanor Semple '51 is glamorous lady engineer in my department."

Louis A. Russell has been promoted to research engineer at the Poughkeepsie, N.Y., research laboratory of International Business Machines. A member of the Magnetics Department, he is a leader of the devices and circuits group. He joined I.B.M. in July, 1953, as a technical engineer in the magnetic cores group, where he made studies of possible means of current driving memory core arrays. Claus Manasse, after spending five years in New Jersey, has moved out to Detroit, where he is now with the Export Division of Chrysler Corporation as a project analyst. His last three years in New Jersey were spent as a financial analyst and supervisor of an analytic section at Wright Aeronautical Division of Curtis Wright in Wood-Ridge.

Frank Conlin married Barbara Rowe of Darien, Conn., in June of 1957, and

they have a daughter Kathleen Mary, born March 31, 1958. Frank is still with Johnson Service Company as sales engineer for automatic temperature and air conditioning control systems. Warren H. Smith is chief architect for Bechtel Associates, New York, in charge of all architectural and building services work. Warren was in Europe from November '55 through May '57, working with Arabian-American Oil Company in The Hague, Netherlands. Did quite a bit of traveling in England, France, Benelux, Germany, Austria, Switzerland, Italy, Lebanon, and Saudi Arabia during his stay overseas.

Al Light is an installation engineer for the Lycoming Division of Avco Manufacturing Corporation. He spent most of last summer in Europe on business and was fortunate enough to have his wife Edna join him over there for a two-week vacation. Al and Edna have two boys: Wendell Emerson II, born January, 1953, and Stacey Howard, born May, 1957. A quick run down on the life of John Flynn. "After graduation spent five months at Ford Motor Company, Dearborn, Mich., as management trainee in foundry. 1951-52 ordnance research and development in Proximity Fuze Detachment at National Bureau of Standards. Graduated as Corporal, Army of the United States. In December, 1951, married to Jane Bullen Train of Annapolis, Md. Family consists of three sons, Mark (four), Stephen (three), and John Jr. (two). Since 1952 have been at Eastman Kodak Company in Rochester, N.Y., in Ordnance Research and Development. Most of my work involves guided missile power supplies, and one of our accomplishments was the development of an ammonia activated battery. Have been treasurer of M.I.T. Club of Rochester for past two years and have been in touch with Dan Test (Thompson Products, Cleveland, Ohio), Charlie Park (Gleason Company), Mike Doyle (Manufacturers' Representative on his own), and Andy Price (Kordite, Macedon, N.Y.), all Class of '50."

Joseph Oppenheim is employed by Bendix Radio in Baltimore, Md., as an assistant project engineer. Carl Connor, Jr., is married and has one girl, Sydney, now four years old. He is employed by Arabian-American Oil Company and is now in Saudi Arabia. Jack Bedell has been married eight years and has two boys, aged six and three. Last year he moved to Smithtown, N.Y.; and he is engaged at Fairchild Engine Division in Deer Park, Long Island, doing work in brazing research.

Peter Stein'49 writes from Phoenix, Ariz., on his current activities: "We left M.I.T. in 1955 for the sunny Arizona clime, and for two years I was with the AiResearch Manufacturing Company of Arizona, as instrumentation engineer. In 1957 our longing for the East Coast took over and for three months we tried Pennsylvania—it took only that long to convince us that Arizona is the only state and that Phoenix is its only city. I've been back at AiResearch now for almost two years, in the same capacity as before. My consulting business has expanded over the years, and I am now

editor-publisher (also office boy, typist, and everything else) of the bimonthly periodical *Strain Gage Readings*, which is the only journal in the world devoted to resistance strain gages, strain gage transducers, and associated instrumentation. I have over 460 subscribers in 13 countries: the journal has been in existence exactly one year. We return to M.I.T. every summer where I still assist Dr. Murray in his two-week course on strain gage techniques as guest lecturer. The program has caught hold, and for two years we have also been giving it at the University of California at Los Angeles and this year we have a one-week version also in San Antonio at the Southwest Research Institute. The other consulting commitments keep me hopping around the country quite a bit, but our wonderful family (richer by now with a two-year old boy and a three-month old girl, also one long-haired dachshund and a canary) and the Valley of the Sun always make it a pleasure to come back."

Ivar S. Westerback is working as a senior engineer at Sperry Gyroscope Company, New York. In May, 1955, he married Mary Hooper, a graduate of Elmira College; and their daughter Diane Susan was born in October, 1956. William David Mohr received his Sc.D. degree at M.I.T. in January and then joined the research staff of Du Pont Polychemicals Department at Wilmington, Del.

Jordon Loftus, who has been in Brazil and has returned to M.I.T. for graduate studies, writes as follows: "In December, 1954, Foster Wheeler Corporation sent me to Brazil to assist in the erection of a modern shale oil pilot plant. Bernice (Rubin), my wife, and Karen Diane, my then eight-month-old daughter, and I had a wonderful cruise to Rio de Janeiro aboard the *S. S. Argentina*. The pilot plant is located in the small town of Tremembe in the Paraiba Valley nearly halfway between Brazil's Sao Paulo and Rio de Janeiro. After the completion of the pilot plant in October, 1955, another U.S. engineer, Edwin Piper (Clark Institute of Technology), and I joined the shale oil division of the Brazilian national oil company, Petrobras. We all learned Portuguese early. I attribute this mainly to the fact that we were well outside of the cosmopolitan area and came in intimate contact with Brazilians, both socially and during working hours. In fact after a short period of acclimatization, we came to feel 'at home' and have made friendships which we are certain will endure throughout our lives.

"The initial staff of the pilot plant was three U.S. engineers, two Brazilian engineers with advanced training, and eight Brazilian civil engineers. The lack of chemical engineers dictated the need to use civil engineers. My initial assignment was to train Brazilian workmen in pilot plant procedures, to teach fundamentals of chemical engineering to the technical staff, and to program initial pilot plant runs. During my four years with Foster Wheeler Corporation and then Petrobras S.I.X., I served successively as construction engineer, shift engineer, pilot plant manager, and chief engineer of the project and process section. Last November

during a process trip through the U.S.A. I ran into Oscar Eubank (X-'50) at the Union Oil Company Prototype Plant at Grand Junction, Colo. I discussed the problem of refining the Paraiba Valley oil shale with a number of companies including Union Oil Company at Brea, Calif., Universal Oil Products at Chicago, Battelle Institute at Columbus, Koppers at Pittsburgh, and Houdry Company at Philadelphia. I also took off a day to visit Las Vegas—no shale deposit but most interesting. We decided to return to the U.S. after the completion of my third contract with Petrobras because of personal reasons. Instead of taking the boat straight home we deviated on a side trip through Europe. We sailed on the Italian liner, *Frederico C*, on December 24, 1958, from Rio de Janeiro. After four years it was a sad parting, and we are hoping in the not too distant future to return to Brazil to see all our dear friends there. Our ship made calls at Las Palmas, Canary Island, Lisbon, and Barcelona. The next four weeks went rapidly. We visited Pisa, Rome, Pompei, Sorrento, Zürich, Köln, The Hague, Amsterdam, Paris, and London. A high light of our trip was our visit with Olaf Steen (X-'50) and family at The Hague. They moved there a year after graduation from his native land, Norway, to join Hercules Powder Company. Olaf and his wife Greta introduced us to Indonesian cooking, which is wonderful. They have three lovely children, Paul, Linda, and Karl Thomas. Olaf has traveled throughout the explosive Middle East, and he and his family were in Alexandria during the Suez affair. On February 1 we zoomed home with Pan American jet, and now we are looking forward to being in the Boston area for the next three years while we soak up some academic life."

Hugo Wikstrom writes as follows: "After graduation from M.I.T. and during the time I worked at the National Bureau of Standards, I obtained a law degree from Georgetown University. To utilize the engineering background obtained with much toil and effort, I have specialized in patent law. My first stint as a patent lawyer was with General Electric, and I was ultimately placed in charge of their Light Military Electronics Equipment Department in Utica, N.Y. After leaving G.E. I went to work as a trial counsel for a Midwest law firm, and I have just recently returned to New York City. I am now in the throes of establishing a practice in association with the law firm of Emery, Whittemore, Sandoe, and Graham—inventions anyone? After the dry Midwest, I, of course, established a residence as close to the water as I could get—out in Port Washington. For the information of dry classmates, the address is 101 Highland Avenue. Drop in and I will ensure wetting with the liquid of your choice."

And one final letter from Larry Sirkis tells of his doings since 1950: "Shortly after graduation, I found myself in the service of Uncle Sam. I spent 15 months in Korea as a first lieutenant in the Corps of Engineers. My assignment was with the Korean Military Advisory Group, which was an organization devoted to

lending assistance to the Korean Army to improve their efficiency. My battalion of Korean engineers had the job of building and maintaining the east coast road from Pusan north to the 38th parallel. Another member of the Korean Military Advisory Group was Al Petrofsky (Course I), Class of 1950. I have been married for eight years to the former Anne Foxman, a 1950 graduate of the Boston Conservatory of Music. We have three children. Linda Beth, aged seven, was born while I was in Korea. The other two children are Stephen Craig, aged five, and Allen Paul, age two. For the past four years we have made our home in Sharon, Mass. There are many M.I.T. Alumni here, including some from the Class of 1950. Stanley Marshall was a Course I graduate from our Class. Paul Berger, also of Course I, is here too. Since August of 1954, I have been employed as a structural designer with the firm of Maurice A. Reidy, engineer, of 101 Tremont Street, Boston. Some of the larger projects we have worked on include the new Jordan Marsh building in Boston, the new Sheraton Hotel in Philadelphia, and the new addition to the Riverside Church in New York."

As for Yours Truly, I am still in the construction business, associated with the Park Construction Company, general contractors in the Boston area. During the past year we have been busy building the new four million dollar addition to the Worcester City Hospital. Was pleasantly surprised last year to find out that the building was designed by fellow classmate Zachary Rosenfield of the firm of Isadore and Zachary Rosenfield, New York City. I see Zach at job site occasionally but more often hear his voice via telephone. Zach is now busy designing the new medical center in Puerto Rico.

As stated in Bob Mann's class letter, the class treasury is just about keeping its head above water. Class assessments of three dollars per classmate will be cheerfully endorsed to keep us financially stable. Kindly mail checks to: Robert Mann, Room 3-482, M.I.T., Cambridge, Mass. Have a pleasant summer, see you in print in the fall. — JOHN T. WEAVER, Secretary, 24 Notre Dame Road, Bedford, Mass.

1951

The faculty promotions made at the Institute for next year include two of our classmates. Herb Woodson has been made an associate professor of electrical engineering and Charles Miller has been promoted to associate professor of civil engineering. Another Institute appointment made Bill Gable a member of the educational council to work with schools in the Baltimore area. Bill is a senior design engineer with Aircraft Armaments, Inc. Other academicians in the class include Stan Vegors as head of the physics department at Idaho State College. Stan was married shortly after graduation in 1951 and boasts one son and one daughter. Gil Bett is assistant professor at the University of Massachusetts School of Engineering in Amherst. Fred Ezekiel, assistant professor in mechanical engineering at the

Institute, participated recently in a panel discussion entitled, "A Future for the Engineer in Teaching: Pro and Con," at the annual fall meeting of the New England section of the American Society for Engineering Education. Fred also was coauthor of a paper entitled "Water Hammer in Nonuniform Pipes As An Example of Wave Propagation in Gradually Varying Media." Bernard Widrow has joined the electrical engineering faculty at Stanford.

Dr. Murray Gell-Mann, professor of physics at the California Institute of Technology, was named the 1959 winner of the Dannie Heineman Prize for Mathematical Physics. The \$2500 award cited Dr. Gell-Mann "for his contribution to field theory and to the theory of elementary particles." Another announcement shows the 1958 Junior Award of the American Institute of Chemical Engineers to have gone to Arthur Metzner, Associate Professor at the University of Delaware, as joint author of a paper entitled, "For Heat Transfer in non-Newtonian Fluids."

Wedding notices include the January marriage of John Nevins and Anne Koch of Allentown, Pa. Also in January, Jerry Elkind and Linda Valenstein were wed in Scarsdale. Jerry is with Bolt, Beranek and Newman in Cambridge. John Knight and Bettye Easley were married in April in Baltimore. Nicholas Browne and Faye Pickinpaugh were married in California in April. Nicholas is now western region sales engineer with Linde Company, a division of Union Carbide.

Among the new appointments we find Si Ta Shiang is now process engineer with the Badger Manufacturing Company of Cambridge. Alfred Wheeler is a new quarry engineer for the U.S. Gypsum Company in the New Braunfels, Texas, plant. Harry Lowell has moved from the marketing research department of Dewey and Almy, to the chemical sales department. Marty Miller has been promoted to vice-president of Adam Hat Manufacturers. Russell Casella has been appointed staff physicist in the physics department at the Poughkeepsie research laboratory of International Business Machines. Before joining I.B.M. a year ago, Russell spent two years in postdoctoral research at the University of Illinois, where he earlier earned his M.S. and Ph.D. degrees.

Dave Schoeffel has a temporary assignment to Japan in the Monsanto-Mitsubishi Yokkaichi city plant. Dave has been operating supervisor in the Lustrex department of Monsanto in Springfield since 1957. Aaron and Carolyn Brody announced the birth of their second son, Glen, on April 10. Their other son is Stephen. Dean Powers, research associate in the M.I.T. Electrical Engineering Department, served as co-chairman of the Middlesex County March of Dimes. His work at Tech involves study of conduction and breakdown phenomena in the laboratory for insulation research. Ralph Schwind is one of three who invented a patented poppet valve operating mechanism.

Speaking engagements have occupied several classmates. In March, Dean Cogswell, a Sloan Fellow in 1950-51, addressed the Amesbury, Mass., Industrial Management Club. Mr. Cogswell is director of personnel for New England Mutual in Boston. James Forgie and his wife, Carma Darley Forgie'57, spoke to the Acoustical Society in Ottawa on, "Results Obtained from a Vowel Recognition Computer Program." Daniel Macero gave a paper before the American Chemical Society when it met in Boston last April. Daniel is on the faculty of chemistry at Syracuse. Benjamin Davidson, helped with two papers given at the American Meteorological Society meeting last January. One was entitled, "Analysis of Atmospheric-Turbulence Spectra Obtained from Concurrent Airplane and Tower Measurements," and the other, "Some Observational Aspects of Valley Winds."

Our program of postcard inquiries has yielded some replies from long-lost classmates. Malcolm Whitlock is with Atlantic Refining in Philadelphia. He and his wife, Mildred, now have two daughters, 11 and 5. James Stoms is a rocketeer, currently working for the Martin Company at the missile test range in Florida. His work since graduation has included participation in the first H-bomb test at Eniwetok, contributions to the design of the *Snark* missile, and launching of the *Vanguard* "Weather satellite" of last February. Jim is married to the former Madge Jones of Covington, Ky., and they have three children. Don Wilson is at the Midwest Research Institute, in Kansas City, engaged in a variety of fields such as ballistics, mechanical analog design and heat transfer. He just finished his M.S. in mechanical engineering at the University of Kansas, and is looking forward to the arrival of child number two. Ed Trimble, a research engineer for Ford Motor Company, is busy developing gas turbines: He says he hopes we are all driving Fords.

Last summer, Ted Stein was appointed project chemical engineer by the Standard Oil Company of Indiana at the Whiting Research Laboratories. Ted and his wife and two children live in Valparaiso, Ind. Simultaneously, Standard Oil announced the promotion of Walker Bowman to a similar post at the same laboratory. Walker, likewise married and father of two children, lives with his family in Hammond, Ind.

In Millbrae, Calif., George Gatter is now assistant director of the city and regional planning division of Wilsey and Ham, Engineers and Planners. Max Ulrich has been appointed general manager of advertising and industry research for Consolidated Edison. W. F. Brown is now manager of manufacturing for Continental Oil Company, in Denver. Since last fall, Russ Osborn has been chief industrial engineer at the Cannon Electric Company plant in Salem. Russ and his wife Rita have two sons, Kevin seven, and Brian one. Bill Clough has recently changed his position from that of section leader at the Metals Research Laboratories of ElectroMetallurgical Company to supervisor of metals research and development at Pratt and Whitney's Connecticut Aircraft Nuclear Engine Laboratory.

Colonel James Cobb is serving as director of the Ballistic Missile Test Directorate at Holloman Air Force Base. The U.S. Naval Ordnance Plant at Louisville cited Walt Johnson for its highly prized "Superior Accomplishment Award," in fiscal year 1958. At Wright Field, Victor Yancey is busy setting records for high altitude flying in such varied equipment as partial pressure suits and helicopters. He mentions having worked with many of the '51 grads who have been at Wright-Patterson from time to time. In his spare time, he has organized a neighborhood civil association and participated in several aspects of community activity.

World Petroleum magazine last year featured a joint article by M. G. Kesler and Marvin Kessler, entitled "Engineering a Process with a Computer." Both are with the M. W. Kellogg Company working on computer approaches to process engineering. Len Taigman is now in Denver, as contract manager for the Titan operational program for the Martin Company. Len was married in 1958 to Jo Graham and says that more family is on the way. Wallace Lebowitz and Sylvia May Greenberg were married in New Haven last October. He is senior resident in internal medicine at the New England Medical Center.

Al Cookson is now director of the Missile Guidance Laboratory at International Telephone and Telegraph Laboratories, Nutley, N.J. John Lee was recently chosen to co-ordinate all space activities between various departments and consultants directly involved at National Research Corporation in Cambridge. Tracy Wichmann is senior engineer and systems analyst for Litton Industries, in California. John Luger is resident salesman in Cleveland for Jefferson Chemical Company.

And Charlie MacDonald, now an ordained minister of the Presbyterian Church of the United States, would be very pleased to have any and all classmates attend services at his church in Fairview, Va. — **RICHARD W. WILLARD**, Secretary, Box 105, Littleton, Mass. **ROBERT S. GOOCH**, Assistant Secretary, 407-410 Danciger Building, Fort Worth, Texas.

1952

We received a letter from Bob Briber, who has been in Dr. Killian's Office in Washington. Bob writes that Hal Lawrence, who had been in Dr. Killian's Office, has moved to a position of considerable challenge in the new space agency, National Aeronautics and Space Administration. Hal and family are living in Vienna, Va. J. P. Saunders is also in Washington, D. C., working for the Justice Department using his southern charm to win tax cases throughout the southern U.S. J. P. got his law degree at Vanderbilt. Bob writes further, that, "Bob Schwanhauser has been in and out of town with the frequency of a yo-yo following the vagaries of a Ryan contract through the Pentagon."

Cliff Herdman writes that he and his wife Mary, and son Christopher Charles, aged one and a half, have just moved into their new house in Red Bank, N.J. Cliff

is working for the New York Port Authority in New York City and is currently on the project of adding a lower deck on the George Washington Bridge to increase its capacity from 8 to 14 lanes. The approach will cut a swath 200 feet wide right across Manhattan between 178th and 179th Streets and sounds like a very interesting job. Cliff writes on, that Bob Roy is also with the Port Authority and is doing highway and port planning. Bill Conville is living in Red Bank where he is assistant equipment manager with Raymond Concrete Pile Company. Bill will be leaving soon to head up an expedition to Ceylon to explore hydroelectric possibilities.

Stan and Jackie Buchin have just had a little girl, Linda Chase, their first child. Stan is working on his doctorate at Harvard Business School in the field of data processing, and is also a research assistant. We are happy to report that Stan and Sheilla Sydney have just had a little daughter, Roberta.

Dick Best has joined Digital Equipment Corporation in Maynard, Mass., as head of circuit design and development work. Joe Alibrandi has just been promoted to the position of assistant plant manager at Raytheon's South Lowell missile plant. Joe is also president of the Lowell Management Club, as well as heading up the Marlex Investment Club in Arlington. The South Lowell Raytheon plant produces Sparrow III, the Navy's new supersonic air-to-air missile. The Army—the Transportation Research and Engineering Command, that is—announced the promotion to captain, of William H. Ferguson Jr. He is assigned as a metallurgist with additional duty as a command pilot in TRECOM's test division. And the Air Force Institute of Technology at Wright-Patterson Air Force Base, announced the graduation of Captain Richard C. Wingerson with a master's degree in nuclear engineering, and the winning of the Mervin E. Gross Award. This award was presented for academic standing and overall application and contribution to the class as a whole. The award is made to one graduate and one undergraduate in each A.F.I.T. class.

Industrially speaking, Jim Davidson is now with the Columbia Broadcasting System in New York City, in the comtroling set-up (at last someone to squawk to about television programs), and he and Marcel are househunting in Westchester. Orville D. Page has been appointed manager of Military Systems for Dage Division of Thompson-Ramo-Wooldridge, Inc., in Michigan City, Ind., makers of closed circuit TV equipment. Thompson-Ramo-Wooldridge also announces a European sales engineering office in Paris, under the management of Willard A. Bridges, Jr. This office has been opened to serve the growing number of customers for computer control and data reduction systems in Europe. And General Electric, Syracuse, announced the appointment of George D. Prestwich as manager of the new Defense Industries sales unit which will serve exclusively the defense prime contractor market.

Tuna Products, of Boston's Dr. Yaichi

Aikawa, does it again, and this time it's the Sealady Meatless Frankfurter, which is "pure, but frankly altered, tuna." But the chances are you couldn't detect the difference between it and a regular meat-packed hot dog, if you weren't told which was which. The secret is in the spicing and cooking which eliminates any hint of fish flavor—well, that's the tunaburger and the frankfurter—what next—steak?

It is with regret that the announcement is made of the death of Paul L. Matthews, II, 33 years old, of a heart condition, in Boston, on April 9, 1959. He was employed as a mechanical engineer at Hyde Vacuum Equipment Co. in Hingham.

Dr. Michael Humenik, Jr., supervisor of Ford Motor Company's ceramic and powder metallurgy group, has announced the development of new titanium carbide tool bits which give a major improvement in tool life over steel cutting grades. At the 39th annual meeting of the American Meteorological Society in New York City, papers were given by Duane A. Haugen, Geophysics Research Directorate, Air Force Cambridge Research Center, Bedford, Mass., "Lagrangian and Eulerian Relationships in the Analysis of Diffusion Experiments," and by Francis Courtney, Jr., Lockheed Nuclear Products Branch, Marietta, Ga., entitled "Mesometeorological Parameters Affecting Low-Level Temperature Inversions."

That cleans out this year's mailbag. Please drop a line around Labor Day if you have any news to report. — **DANA M. FERGUSON**, Secretary, 252 Great Road, Acton, Mass.

1953

Christmas does not come once a year . . . it comes *twice*; that is, twice for class secretaries. Many of you mailed in the form attached to Paul Shepherd's recent letter; I am most grateful for the news! *Don't stop now, though.* If your news does not appear in this copy, please be patient; it may have arrived after the editor's deadline date. Consequently, it will appear in the next issue.

Joe and Patricia Urner have a two-year old daughter (Susan) and are living in Belmont, Mass. He has a most interesting position as a research engineer in Operations Research with the Missile Systems Laboratory of Sylvania Electric Products at Waltham. Prior to working for Sylvania, Joe received his master's degree from M.I.T. Dave Berg is in the structural design business with Goldberg, LeMessurier and Associates, here in the Boston area, and lives close by in Needham. He and the little woman have one daughter about five months old, though prior to taking on these responsibilities he finished his S.M. at Tech. Dave reports that George Tseklenis is still with Fluor, Ltd. (California, I think) and "married—one child—male."

One of our more versatile classmates, Robert Packard (now living in Attleboro), recently had the opportunity to apply some of those "basic scientific principles" we acquired in earlier years. The *Boston Herald* reports that he and "science come to the rescue," together managed to clear a local highway route of some 1600 pounds of nails which fell from a truck.

The secret; magnets attached to broom handles. Phil Stark (a '53 G who received his Ph.D. at Tech) is stationed at Dayton with the U.S. Air Force, and has a young son of about seven months. Two classmates recently completed graduate work at ye olde Harvard University (you know, that school about three miles west of Harvard Bridge). Herbert Curtis received a master's in engineering, and Robert Marr went all the way for a Ph.D. I mentioned seeing Jean-Pierre Radley last month. As it turns out, he is a physical science administrator with the Air Force Cambridge Research Center. J. P. travels a reasonable amount, particularly to Washington, New York, Dayton, and Omaha. Like many others, he went on for an S.M. at Tech. Understand from him that Daniel Mattis is working for International Business Machines at Poughkeepsie.

Landry Slade is continuing his education at the Graduate School of Chemistry, University of Virginia, in Charlottesville. Having completed his S.M. there a year ago, he is now doing research for a Ph.D. About a year and a half ago Landry married Virginia Randolph and they are expecting a child this September. He added the following notes about some other classmates: "Dave Nelson is finishing his Ph.D. in chemistry at the University of New Hampshire in Durham, N. H. His wife, Joan, is working on her Ph.D. in zoology there also. They have one child, Randal. I saw Dave at the Boston meeting of the American Chemical Society, in early April. Howie Munro and family are living in western Massachusetts where Howie works for General Electric. I saw him at the Boston A.C.S. meeting also. Stan Bloom is an assistant professor of chemistry at Smith College now. He is married. Saw him in Boston, too. Bob and Connie Stolow had their second child (both girls) recently. Bob received his Ph.D. from the University of Illinois, and is an instructor in chemistry at Tufts College in Medford, Mass. He gave a paper at the Boston meeting — unfortunately I missed both Bob and the paper. Joe Casanova was going to take a postdoctoral fellowship at the University of Illinois when he got out of the Army (he was — or is — a first lieutenant in the Chemical Corps at Edgewood Arsenal, Md.); I'm not sure whether he is out as yet. He and Elinor have one boy with a second child expected. Sumner Burstein is on a postdoctoral fellowship at the Weizmann Institute in Rehovoth, Israel. He will finish soon — if indeed he has not already done so — whereupon he plans a long return trip through Europe. I don't know what his plans are thereafter. Jim Waters was, at last report, in the Graduate School of Chemistry at the University of Iowa in Ames." (Thank you, Landry for the news.)

Joan Fleckenstein Mizer is leading a full life; she and her husband Charles have one child and are expecting another. She fills in spare moments with graduate work in geology at the Colorado School of Mines. She reports that Bruce Hanshaw is working for Petroleum Research, Inc., in Denver, Colo. Bob Ebeling is "sojourning" down in Springfield, Va.; he's a traveling salesman for the Ebeling and

Reuss Company (what do you sell, Bob?); has his S.M. in chemical engineering from Tech, and has been married since fall, 1957. Gus Gilfillan dropped us a note from Dayton, Ohio, where he works for the Nuclear Products Division of ACF Industries, Inc. (they design and construct nuclear reactors). Gus is resident engineer for an Air Force nuclear engineering test reactor and is working on a master's in business administration degree at Ohio State University; he and Elizabeth now have two children (one of each). Gus added, "Would welcome visitors from near and far to give me a call when in the Dayton area. I am located at Wright-Patterson Air Force Base. Awfully sorry I couldn't make the reunion. Will next time."

Marvin and Elinor Turkanis are located in the Boston area at Sharon. He works for a subsidiary (M and C Nuclear, Inc.) of Texas Instrument in Attleboro, as chief metallurgist. Since graduation, Marv has added two girls and an S.M. degree (from M.I.T.) to his "collection." Dick Neller reports that he was unable to make the reunion last June, "owing to wedding proximity." He has changed jobs and is now with Charmin Paper Products Company (a subsidiary of Procter and Gamble), Green Bay, Wis., and is doing process and quality control work as a chemical engineer; and is also assisting in the regional solicitation program for the M.I.T. Alumni Association. A number of M.I.T. Alums are in the Green Bay area, including another classmate, Richard Griese.

Jim and Mary Frances Klupar are living in Avon Lake, close by to Cleveland where Jim works for B.F. Goodrich Chemical Company. After three years in process design, he changed to economic analysis for the production vice-president. Jim travels occasionally to Chicago and Louisville, Ky. So far, he and his wife have two children, both boys. Sam Roller, at the present time, is about 9,000 miles away, but his sister dropped a note saying that he was doing civil engineering work with the Capital Engineering Corporation in Saigon, Vietnam. Still single. Apparently Nick Fast keeps a busy schedule. A note from his wife Betty says in part, "He is finance chairman of our representative town meeting (the town's legislative body). Also, he is singing in the Electric Boat mixed chorus (E.B. is a division of General Dynamics Corporation — his employer), chairman of the regional solicitation for (you guessed it!) M.I.T., and is building a sailboat so he can teach Stephen (the oldest of four boys) to sail. To bring you up to date since leaving M.I.T., we have been here in Groton, with Nick at E.B. since graduation. We recently moved into a large new house which Nick designed especially for life with four boys. Nick has been active in community affairs ever since we got settled here — helped to draft a new charter for the town and has been in the town government since then. Also, he has to baby sit while I am out agitating for improved library facilities in town. Add four lively boys to the formula and you can see why we are so busy." Kenelm Guinness (who is now a *Sir*) is presently living in Washington, D. C., though he

travels extensively through Europe and the Far East. His travel is in connection with his job with the International Bank for Reconstruction and Development (World Bank). Specifically, he is making engineering appraisals of projects and negotiations towards their financing.

Chuck Forman, his wife, a girl and a boy are all hoping he will finish his Ph.D. sometime this summer or fall, and then return to Abbott Laboratories in North Chicago. He is completing his doctoral studies at Northwestern University in chemical engineering, where he received his S.M. about two years ago. He adds, "Jack Rempert, working and living in Pasadena, Calif., has two children (plus wife). Saw them when they were in Chicago over Christmas."

George and Betty Martin Howard are in the deep south where he makes a living as assistant to the director of market development of Continental Oil Company in Houston, Texas. In the meantime they have been raising two children, a girl and a boy, and Howie picked up his master's in business administration at the Harvard Business School. Travels occasionally — from New York City to New Orleans. Good news from Jack and Janice Sample, who said, "Moving back to Boston on a relatively permanent basis and will be looking forward to seeing everybody." Jack is a sales engineer with Raytheon Manufacturing Company, and so far he and Janice have one child, a girl. He also reports that Bill Rice works in the Materials Laboratory. Ed and Elinor Hickey, plus their family of four (two of each), are living nearby at Foxboro. Presently, he is section leader of the Thermal Laboratory of the M.I.T. Instrumentation Laboratory here in Cambridge. A footnote added that Bob Ferran is at Transonics. Jim Mast and his wife Martha are also raising four kids — also two of a kind. They are living in Grosse Pointe Farms, Mich., where Jim is both office manager and superintendent for the Walter H. Mast Company (custom building). Prior to going out there, Jim got his S.M. at dear ole Tech. Jim added, "Just got back from trip to Washington, D.C., and down into the Carolinas, coming back through the mountains. We left the kids at home, so it was a real vacation. George Abbott has just gotten himself a Triumph sports car and looks very sporty, is working for Chrysler Missile, and is unmarried as yet." R. J. Browne is general manager and chief engineer of the pump division of the American Meter Company. He and Carla are now in Chalfont, Pa.

Tom Lamb reported in from Mansfield, Ohio, where he and his wife Bonnie-Lou are raising two young fellows; the last one was born four days before this was written. (Boy, talk about news hot off of the press!) Tom jaunts around the countryside from Boston to California in connection with development of the electronic (microwave) range for the Tappan Company. Will include a letter from Roy Blackmer, Jr., who at the moment is living in Champaign, Ill., "... The 5th reunion sounds like it was a very successful affair. I had planned to attend but had an automobile accident June 10, which rendered my 1955 Rambler unfit for the

trip from Illinois to New England. I have been here in Illinois with the Illinois State Water Survey since receiving my master's degree from M.I.T. in 1955. I am doing research work in meteorology (Course XIX) under contracts with various groups. The Signal Corps sponsored the research project I supervised from 1955 to 1958. Currently, I am working on a study of hail for the Crop-Hail Insurance Actuarial Association. Recently an opportunity presented itself for me to go to California and work as a research meteorologist for Stanford Research Institute. I accepted the offer and July 1, me, my wife, and two boys (ages four and five) will aim our new 1959 Rambler station wagon west to Palo Alto. We would be happy to hear from any Alumni in California, and promise to try to visit after we get settled." (Their address is: 802 West Hill Street in Champaign.)

Deadline date for this issue has "arrived," so I must quit. The forms are still coming in, so will start off with them next fall. In the meantime, do hope you have a delightful summer . . . and please keep in touch with "yours truly." — MARTON WOHL, *Secretary*, Room 1-133, M.I.T., Cambridge 39, Mass.

1954

Our first fifth year reunion has come and gone, and a fine affair it was. Printing deadlines prevent our giving a report on it now, but we will have the full story in the first issue next fall. In the meantime, we have a few news items to pass along.

From Paul Valerio we received a lengthy letter which mentions several members of the class. Marty Raab has recently been promoted to project architect with the firm of Voorhes, Walker, Smith, Smith and Hayes in New York City. Ed Hofstetter and his wife Nancy have a new daughter, Christine. Ed expects to acquire his Ph.D. in electrical engineering from Tech in the fall. Shel Dick is still playing soldier in Europe. Sooren Soovajian is climbing the pay scale at International Business Machines in Kingston, N.Y. Bob Lait and Howie Schiff are whole and entire in New York City. And finally, Paul mentions that he and his wife Agnes have recently moved into a new home in Brooklyn. Paul is teaching chemical engineering at Brooklyn Polytechnic Institute, and doing a little free-lance engineering on the side.

We received a card from Mrs. Bernard Sadoff (Bernie is Class of '55) which we quote: "I'm sick of opening The Technology Review and finding no news of people I know, so I have taken it upon myself to send some news of my husband's friends to the various secretaries. Marshall Nathan is now working for International Business Machines in Poughkeepsie, N. Y. His only child, Eric, will celebrate his first birthday in May." Thank you very much, Mrs. Sadoff. Maybe the wives of some of the members of the Class of '54 could make similar use of postcards, since their husbands seem to be singularly unacquainted with these inexpensive little couriers.

From other sources we have learned that Bill Wheeler has been named a vice-

president of the Motorola Corporation, in charge of the company's military electronics division. On the social side, word has reached us that Don Bailey married Lilly Ann Barker in Larchmont, N. Y., on April 12. Several weeks later, on May 2, Gabe Popper and Honora Anne Hamm were married in South Williamsport, Pa. And that about exhausts the news for a while. We will have the full report on the reunion in November. — EDWIN G. EIGEL, JR., *Secretary*, 2107 South Grand Avenue, St. Louis 10, Mo. (Note new address.)

1954G

Leonard Kranser writes that in June he will receive his master's in business administration from the Harvard Business School, after which he will join the Gillette Safety Razor Company as chief inspector of razors. During the past year Leonard did some work at the M.I.T. Computation Center on business simulation.

Monroe Dickinson, Jr., joined International Business Machines in June, 1952, as a technical engineer in Systems Research; he was named associate engineer in December, 1954, and staff engineer one year later. In May, 1957, he was appointed advisory engineer in Applied Research and Advanced Development; in 1958, development engineer and manager of Space Guidance and Control Systems; and most recently, senior engineer, Space Guidance and Control Systems at the I.B.M. Owego, N.Y., plant. Congratulations!

In March of this year, Dr. Ronald Smyth presented a talk and demonstration on "Batteries — Yesterday, Today and Tomorrow" in a series of science seminars offered annually to high school and college mathematics and science teachers. Dr. Smyth is currently a section head in the Solid Electrolyte Laboratory of the Research and Engineering Department of Sprague Electric Company, which sponsors the seminars.

One of the recent winners of the 1959 Guggenheim Fellowship Awards was Dr. Hermann Haus. He received it for studies in the field of magnetohydrodynamics. Dr. Haus is presently an M.I.T. professor. Congratulations!

Mr. Victor C. Houk has been appointed manager of market planning, Industrial Tube Products Department, Electron Tube Division of the Radio Corporation of America. Previously he was administrator of market planning in microwaves. He will make his headquarters at the division's plant in Lancaster, Pa.

This month's column ends another year's reporting. I hope all of you have a very enjoyable summer; and during your vacation please write a post card to me or direct to The Technology Review, M.I.T., so that we can start after the summer with a full column of news and whereabouts. — NEWTON SHANBROM, *Secretary*, 824 Gilmore Drive, Reynoldsburg 26, Ohio.

1955

Thanks to Denny's 17 line plea in the May issue of The Review and Chan's class letter, there is news to pass along

this month! The number of letters received in the past week approximately equals that received during all the rest of the year! Many thanks to you loyal classmates and you loyal wives of classmates who have responded to our cries for news.

Harold Hargreaves has brought us up-to-date on his activities since 1955, hoping that his doing so will inspire others to follow suit (me too). Before joining the Dominion Textile Company Ltd., in 1957, Harold collected a master's degree in business administration at the University of Western Ontario. In August, 1957, he married Audrey Phillips of London, Ontario, and they are now living in Drummondville, Quebec. Harold is involved in development work on fishnets, twines, and other industrial fabrics. An epistle from Eric Theis, who is home in Chicago, was a veritable gold mine of information. Eric is a sales engineer for the Kritzer Products Division of Peerless of America, manufacturers of air-conditioning equipment. (Yes, Eric, it's Chan who peddles thermostats; want some?) He reports having seen Bob Morgan, who is now at the Wharton School of Business, at the University of Pennsylvania, in Philadelphia. Bob has bought a new car from Lattof Motors, and has heard from Jim Smith and Don Burrer recently. Excellent service on the car, he says. Warren and Char Lattof have gone about settling down in a big way, having acquired a house recently. Jim and Jan Smith have also bought a house, in Albuquerque, N. M., and now have two children, a son, Evan Arnold, being the new addition. Don and Nancy Burrer are living in Cincinnati, Don's home town. The momentous news from Eric, though, is that of his engagement to Laura Yates of Petersburg, Va. (not everything about the Quartermaster-Reserved Officers' Training Corps turns out badly, you see). The wedding is scheduled for August 15. Congratulations, Mr. Theis! And thanks for the letter.

Congratulations, too, to the Walter Fritzes, who report from Winter Park, Fla., their first blessed event, a son, David Rysam, who was born in February. Another contribution from Chicago came from Bud Sadoff's wife, who shares our annoyance at the dearth of news. She reports that Bud is a sales engineer for Koppers and that they have a daughter, Carol, who will soon be two years old. Also that Robert Stone is with Cities Service Research in Cranbury, N.J. Bob and his wife, Pat, have a six-month-old daughter, Susie. Mary Hauser writes that she and Al have recently purchased an old colonial house in Glastonbury, Conn., and are anxiously waiting to move in. Buck has been at Pratt and Whitney in their material development laboratory since they returned from the Army and Aberdeen, last July. Since this is the last column 'til November, here's hoping that the mail will pour in over the summer! Again many thanks to our correspondents.

Dell sent the copy for this month to your male correspondent, and I can't resist putting in the 2¢ worth from Cambridge before passing it on to our dear editor.

Some months it's better to be like Mohammed, and take the attitude that,

if I don't go out for news, then the news will come to me. This seems to work, for, a few weeks ago I was awakened from my in-between-coffee-breaks snooze by the familiar voice of Fred Brooks. It seems that Dunlap and Associates of Stamford, Conn., sent one of its newest associates to talk to us about a certain contract, and we were able to renew old times over lunch that noon. Fred was with the Electric Boat Company in New London, Conn., until recently, when he made the move and took a house at Fairfield, Conn. Eve keeps busy as a mathematician at the American Machine and Foundry Corporation when not superintending the Brooks household.

Another graduation is coming around, and another Alumni Day. I hope that many of you will have been present at the inauguration of President Stratton, and that next November we can report a goodly '55 get-together. We must also notice that it's only one year till our fifth reunion, and it's never too early to start thinking of attending. We'll have much more to say come the November issue, and I know that Len Wharton, our reunion chairman, is cooking up a sharp shindig. I add my thanks to Dell's to those who have kept us going with newsy letters. To you we say, "Be fruitful and multiply."—MRS. J. H. VENARDE, *Secretary*, 107 Mullin Road, Wilmington 3, Del. L. DENNIS SHAPIRO, *Assistant Secretary*, 15 Linnaean Street, Cambridge 38, Mass., ELiot 4-4901.

1956

Summertime is showing signs of arrival, even in Canada and Alaska; and this is the last edition of this column until November. Apparently the continued appeals have had some effect. The influx of mail in the past few weeks has been considerably greater than in previous months, and I find that I have something to write about this month.

June is convocation time, and a few of us who have stayed behind in the ivy-covered halls are collecting new sheepskins to show for our academic efforts. At Tech, Karl Pearson is getting a master's in electrical engineering in June. Karl will be working in the Boston area for Bolt, Beranek, and Newman after graduation. Stu Uram is finishing up his Ph.D. thesis in metallurgy for June, and will stay on at Tech in a research position.

Upriver at Harvard Business School, Warren Briggs, Bill Leitch, Jean-Paul Dreyfus, and Regis Schultis all received master's in business administration degrees in June. Bill, former *Technique* editor, followed the same interests at Harvard and edited the business school yearbook this year. He plans to work for McGraw-Hill publications after graduation. Warren Briggs likewise followed his Tech job of *Social Beaver* editor by serving as editor of the Student Association Handbook at the Business School. Warren has taken a job in Boston with Harbridge House, doing consulting work on inventory control.

I hate to bring up the old theme that Bruce has been harping on for months, but it seems that Tech men are finding that "Boston girls are better, two-to-one."

Dave McBride, who is currently at Tech working on his Ph.D. in metallurgy, is engaged to Miss Jean Low of Chestnut Hill, Mass. The wedding is planned for October. Walter Hicks was married to Faith McCrum of Newton on April 20. Steve Cohen, now finished with his third year at Harvard Medical School, wed Edith Ezrailson of Wilmington, Del., on June 17.

Jake Auslaender is now working in Washington, D.C., for the research and propellor branch, Ship Powering Division, David Taylor Model Basin, U.S. Navy. According to Jake, "the name is a pretty good description of the work." It ought to be, it's long enough. The Auslaenders also report the arrival of a son, Alan David, born October 27, 1958.

From the boys in uniform: Don Barnby is at Fort Sam Houston in Texas with the Signal Corps. Bob Alter is now safely out of the Army after two years in the Chemical Corps, and at last report was sitting in Chicago waiting for someone to offer him a job. Ed Boggs is now with the Air Force in Roswell, N. M., and Robert Carlson is at the Naval Air Station in Alameda, Calif.

The end for another year. May all your summers be more pleasant than mine: I'm going to start writing my thesis.—M. PHILIP BRYDEN. LIEUTENANT BRUCE B. BREDEHOFT, AO 3067617, *Secretary*, 794th AC and WRON, A.P.O. 345, Seattle, Wash. M. PHILIP BRYDEN, *Assistant Secretary*, 3684 McTavish Street, Montreal 2, Quebec, Canada.

1956G

The Technology Review has a new editor, Mr. Volta Torrey. The Graduate Class of 1956 accords him a gracious welcome in the interest of furthering graduate student Alumni relations with the Institute.

William Ceckler has been appointed a chemical engineer for the Jones and Laughlin Steel Corporation. Bill was former director of the Buffalo Station of M.I.T.'s School of Chemical Engineering Practice. Bryan Brown, now lieutenant commander, U.S. Navy, has been transferred to Heavy Attack Wing One in Sanford, Fla. Carl Ostertag has received a promotion to lieutenant commander. His new duty station reads, "Heavy Attack Wing Two" on the West Coast. Robert Laudise is mentioned in a recent Bell Laboratories news release for his contributions in the development of the first commercial synthesis of quartz. Robert came from Union College and held the Arthur D. Little Fellowship in Chemistry while at M.I.T.

Dennis E. Johnson, S.M. in chemical engineering, is working in the field of process development and economics at Arthur D. Little. In April, Dennis gave a talk at the Newbury, Mass., forum on "New Developments in Research and their Imprint on Our Daily Lives." John Zotos has appeared in the Boston news again. During the month of April, John presented several papers at metallurgical conferences.—LIEUTENANT (jg) CHARLES T. FREEDMAN, U.S. Navy, Special Weapons Division, U.S.S. *Independence* (CVA-62), F.P.O., New York, N.Y.

1957

Ron Delaney and Patricia Danesi of Groveland, Mass., were wed this April. Dick Knapp served as one of the ushers. Ron is now a member of the M.I.T. Club of Ft. McClellan. Among those presenting papers at the Acoustical Society of America meeting in Ottawa are George Ashley of Lincoln Laboratory, whose paper is entitled, "10 Millisecond Mechanical Audio-frequency Delay Line"; Dave Green, "Analysis of Sequential Decisions"; and another entitled "Detection of a Pulsed Auditory Signal in Noise as a Function of Duration and Frequency"; and Jim Forgie '51 and Carma (née Darley) Forgie, "Results Obtained from a Vowel Recognition Computer Program."

Journal of Applied Physics, March, 1959, carries an article by Malur Narasimhan and Bill Kingery '48 entitled "Densification during Sintering in the Presence of a Liquid Phase." Dick Bloomstein, now in Philadelphia, is author of some humorous greeting cards. Harry Duane has been appointed chief accountant of Norton Company's Refractories Division and a member of the division's operating board. Harry is a member of the National Association of Accountants and is assistant secretary of the M.I.T. Club of Central Massachusetts. Sigma Chi Hank Cutler is engaged to Mary Cornforth, Wellesley '59. Hank is working on an S.M. in electrical engineering at Tech. Hank Salzhauer is with Uncle Sam, getting out this September.

The DeMarcken brothers write: "Pierre has been in flying school for over a year. He is presently assigned to Luke Air Force Base, Arizona, where he is a student pilot flying F100's. Louis just came back from a one-year assignment in Korea and is presently assigned to the Headquarters, Air Defense Command, ENT Air Force Base, Colorado."

We had a fascinating day recently attending the M.I.T. Club of Long Island's tour of Brookhaven National Laboratories including the cosmotron, research reactor, hot chemistry laboratory, and 25 BEV alternating gradient synchrotron. Have a good summer!—ALAN M. MAY, *Secretary*, 530 East 84th Street, New York 28, N.Y., RE7-8063. MARTIN R. FORSBERG, *Assistant Secretary*, 383 Harvard Street, Cambridge 40, Mass.

1958

I'd just like to fill in a few lines to wind up this year's writings and tide affairs over until next fall. First of all, we'll continue our monthly custom of listing wedding pronouncements that are overdue. Benedict (Dick) Rosen, VI, was married to Brenda Wekstein of Haverhill, Mass., and Boston University's College of Business Administration. He's with Sprague Electric Company in North Adams, Mass., where the couple now reside. Another electrical engineer, Bruce Wedlock, was wed to Mary Ann Johnson of Stamford, Conn., late last August. She received a B.S. from Simmons this past June, while Bruce, who has his S.B. and S.M. degrees, is currently working on an electrical engineering doctorate. They live in Brookline, Mass. Jim Denker, II, mar-

ried Tech coed Beryl Sylvester, '60 of Scituate, Mass., in that town in September. After a wedding trip to Maine, the couple began residence in Wollaston, Mass. Jim is employed by Bethlehem Steel Corporation in Quincy, Mass. And one more note — Diana Collins, master's degree in city planning (IV-B), was married to Robert Donald, Cornell University city and regional planning graduate student, in Hingham, Mass., also in September. Diana is a graduate of Mount Holyoke College, where she won Phi Beta Kappa honors. The couple now reside in Ithaca, N.Y.

News in other fields includes Llyod Taylor (Ph.D. in organic chemistry and B.S. from Boston College) as a research chemist with the Polaroid Corporation here in Cambridge after having completed a hitch as a lieutenant at Fort McClellan, Ark., in the Army Chemical Corps on the six months' program. He and wife Marianne are living in Everett, Mass. Further information has sifted through to the ears of your reporter on Rich Johnson, III, whom we mentioned a couple of months ago as a renegade moving up the cloudy Charles to (we'll whisper that name again) Harvard Graduate School of Education. It seems that Rich is a recipient of an Alfred P. Sloan National Fellowship for a one-year graduate program at Harvard aimed at strengthening the country's secondary school science education programs. Rich also was a Sloan National Scholarship holder during his undergraduate days here at Tech.

On a professional level, Louis Berkofsky (Ph.D. in meteorology, B.A. from Brooklyn College and M.S. from New York University), who is now with the Air Force Cambridge Research Center, was the coauthor of a paper entitled, "Investigation of Upper Atmospheric Heating Effects by Means of a Dynamical Model," delivered at the annual meeting of the American Meteorological Society in New York last January. Fred B. Cox, VI, spoke at the American Institute of Electrical Engineers winter meeting in New York in February on "Application of Switching Transistors and Saturable Reactors in a High-Performance Servo"; John M. Heinz, also VI, delivered a speech on "Automatic Resolution of Speech Spectra into Elemental Spectra" at an Acoustical Society of America session in Ottawa, Canada. From the sound of these topics, it seems that the old adage of "a Tech man's thesis is never done" has merit.

On a local note, a few words are in order concerning the Class of '58 cocktail party, which was held in April here at the M.I.T. Faculty Club. With so much of the Class scattered to all regions of the globe, the affair was planned by the executive committee mainly as a "reacquaintance" social get-together for graduate students and others of the Class of '58 still lingering in the Boston area, although all of you should have received Prexy Bob Jordan's letter concerning the party (if

you didn't, contact Bob, the Alumni Office, or me about it, informing us of your correct present address). Having only a vague idea of the number of '58 grads within the area, we had hoped for a larger turnout than we had, especially since the other half of Yours Truly's secretary-treasurer office was partially underwriting the cost of liquid refreshments. Anyhow, some of those with whom I exchanged a few words included Bob Jordan (of course), Bob Phinney, Mike Falk, Mr. and Mrs. (Toni Deutsch) Ed Schuman, Dave Berg (and Texas fiancée Ann Gordon), George Bienkowski, Larry Boedecker, Paul Zeiger, Paul Burr, Bob Zingali, Pete Lenn, John Christian '57, Chuck Ingraham, Mr. and Mrs. Bill Daly, and of course also the lovely young ladies escorted by some of the above. I'll have a few more lines to relate in this column about these folk when space permits in the fall.

I seem to encounter Class of '58 graduates in an amazing variety of circumstances. As I was hitchhiking across the Harvard Bridge toward my apartment hovel one rainy Boston afternoon this past spring, I gained a ride with Bob Witte, erstwhile baseballer and Course VI grad. Bob is currently squeezing in one graduate course at Tech while working full-time for Minneapolis-Honeywell's Boston office.

Lastly, I received a letter a couple of weeks ago from Mike Kenyon relating the complete adventures of '58 grads from the Delta Upsilon house. Don't give up hope, Mike — I'd like to print a good portion of it, so I'll hold it until next time when I'll have room to do it full justice. It'll be the first item on the agenda for the fall.

Well, have a pleasant and relaxing few summer months, and I'll be seeing you again at the same old stand in the fall. I'll be working for General Electric's Knolls Atomic Power Laboratory on the prototype for the *Triton* submarine reactor during the summer months, but you can still reach me at my home address listed below. In the fall I'll give you the address of my new habitat. See you then. — HERBERT G. JOHNSON, 99 Price Boulevard, West Hartford-7, Conn.

1959

We finally made it. The Class of 1959 is now listed among the illustrious Alumni of M.I.T. It seems kind of funny being listed in the same breath with the classes of the late 1800's, but I guess we'll get used to it soon. Our Class will always be remembered, if for no other reason than the unusual date of our 25th reunion. We hope, though, for a heck of a lot more.

About 25 per cent of the Class has returned a card telling of their plans for the next year or so, and it appears as if over half of the Class will be attending graduate school. Naturally, M.I.T. leads the list, but there are many others receiving a fine contingent from our alma mater.

Attending M.I.T. for a second degree will be: R. Bates, Emil Battat, Manuel Blum, P. Brosens, Larry Broutman, Paul Brown, Bob Coward, C. Desper, Owen Devereux, Gary Falkenstein, Bob Flagg, Henry Freynik, George Glass, Gardner Hicks, Willard Johnson, Warren Jones, Kent Kresa, George Langford, Mal Laughlin, Dave Ludwig, Denny Lytle, Marv Mannheim, Clarence Newberry, Al Novak, Al Oppenheim, Steve Ostun, Dave Packer, L. Pease, P. Rios, Earl Rogers, Ivan Schmidt, Nam Suh, Roger Travis, W. Vantassell, Larry Vaughan, Jerry Welch, Bill Widdall, and Sam Wilensky.

Attending the liberal arts college down the river will be: Bob Berk, Joe Hendren, Walt Humann, Carl Neu, Kost Pankiwskyj, Ed Safran, and Dick Sampson. The West Coast will also be well represented with John Brauman, Harold Laeger, T. Margulis, A. Maksymowicz, and Bob Manlove at the University of California at Berkeley. Stu Brody and Leon Glicksman will be at Stanford, R. McDonald at the University of Southern California, and Ken Kellermann at California Institute of Technology. Columbia University will see Steve Parkoff, Marty Zimmerman, and myself. Mike Ash, George Henry, and Joe Kubis will study at Princeton. H. Alker and Mike Intriligator will go Ivy at Yale. Bib Warner and Larry Wright are going to Brown to study. Other eastern schools that are represented are: A. Baratoff at Cornell, Joe Ganny at Rutgers, Ron Colier at Brooklyn Polytechnic Institute, Paul Todd at the University of Rochester, and Charles Spangler at Northeastern. Heading farther south, we find Lamar Langer and Dave Pawliger at the University of Florida, John Glenn at Duke University, Heinz Koster at Vanderbilt, and George Webb at Virginia Polytechnic Institute. The Midwest will also have its share of visitors from beneath the dome. Mike Brunschwig, Dwight Crane, and Karl Landstrom are all going to the University of Michigan. Andrew Jason and Roger Kane will be at the University of Chicago, and Don Liss will be at the University of Illinois. John Brackett will attend Purdue. Outside the United States, Vic Mashaal will be at McGill and Harold Gilliland at the University of Bristol in England.

I'm sure a lot more of the members of the Class of '59 will be attending graduate schools all around the nation, so I'd like to hear from all of you telling about your future places of study. By the same token, a lot of us will be settling down to work, the Army, or marriage. I'm not sure whether all three belong in the same category, but you all know what I mean. Please drop me a line giving all details. Next issue we'll try to give a complete run down on some of the types of jobs held by our class members and their location. Naturally, all wedding and birth announcements will be more than appreciated. Hoping to hear from you all, soon. — ROBERT MUH, *Secretary*, 8 Merrivale Road, Great Neck, N.Y.



and the prophet replied:

*"It is well to give when asked, but it is better to give unasked, through understanding."**

Gifts by Will

TO THE

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The tale is told of Almustafa, the prophet, who, having awaited for many years the ship that would return him to the place from whence he came, was making the final descent to the shore when the folk of Orphalese crowded about him. They besought him before departing to "disclose us to ourselves, and tell us all that has been shown you of that which is between birth and death."

With words of wisdom, an answer appropriate was given to the woman holding a baby, to the ploughman, to the merchant. Begged one, "Speak to us of GIVING," and the prophet replied:

"It is well to give when asked, but it is better to give unasked, through understanding;

And to the open-handed the search for one who shall receive is joy greater than giving. All you have shall some day be given;

Therefore give now, that the season of giving may be yours and not your inheritors."

Through the years the prophet's words have held true, for even today he who "through understanding" includes the MASSACHUSETTS INSTITUTE OF TECHNOLOGY as a beneficiary in his will can experience thereby a two-fold satisfaction. The successful culmination of his search for a worthy recipient and the anticipated results his generosity will assist in accomplishing. These satisfactions give an added value to the span of man's days and project his usefulness to his fellowmen far into the future.

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A booklet "Gifts by Will," outlining different forms of bequests to M.I.T., is available to you or to your attorney by writing to:

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* "The Prophet" by Kahlil Gibran

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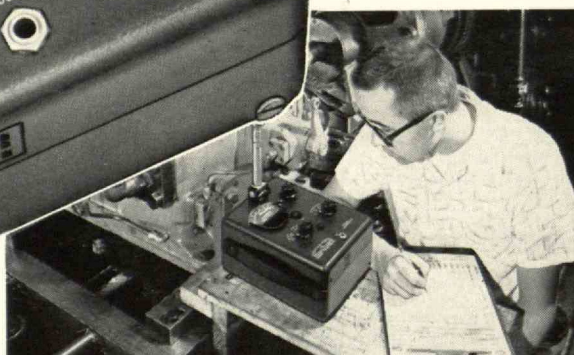
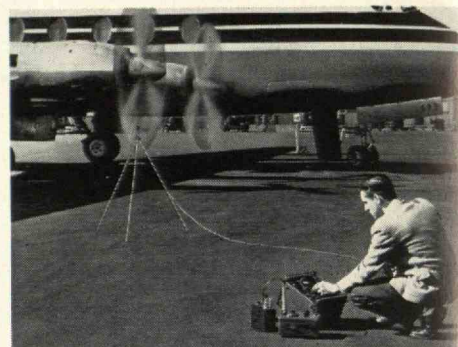


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